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A Study in Judging the Opinions of Groups

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UNIVERSITY OF TORONTO

BY
R. M. W. TRAVERS, PH.D.

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ACKNOWLEDGMENTS

I am greatly indebted to Dr. Goodwin Watson who sponsored this study as a doctoral dissertation. There is hardly a page that does not owe something to his good advice.

The customary note of thanks is quite inadequate to express my gratitude to Dr. Irving Lorge for first starting me on the road which leads to a doctoral dissertation and for his continued advice, encouragement and constructive criticism.

While this study was in progress a study in the same field was being undertaken by Mr. Richard Wallen to whom I am indebted for making all his material available to me. Unfortunately, the present writer was not aware of Mr. Wallen's investigation until this study was complete.

Finally, I am grateful to my wife for all the long hours spent by her in the preparation of the manuscript and for her help in the research itself.

1397

TABLE OF CONTENTS

CHAPTER I

PAGE
The Importance of the Area Studied 5
Research in Related Fields and Its Bearings on the Present Study 8
Questions Which the Study Aims at Answering 12

CHAPTER II

The Method of Study 13
The Variation in Judgments of Group Opinion 17
Relationship between an Individual's Own Opinion and His Judgment of Group Opinion 23
The Degree to Which an Individual Feels Strongly About an Issue as a Factor Determining Judgments of Group Opinion 29
The Relative Abilities of Men and Women at Judging Group Opinion 30

CHAPTER III

The Ability to Judge Group Opinion and Its Relationship to Other Personality Traits 34
The General Ability to Judge Group Opinion 45
The Relationship between the Measure of the Ability to Judge Group Opinion and Other Measures 50
The Judgments of Members of Minority Groups 55
Acquaintance and Judging Group Opinion 59

CHAPTER IV

SUMMARY OF THE STUDY, CONCLUSIONS, AND THEIR IMPLICATIONS

The Problem and the Method of Study 63
Main Conclusions and Their Interpretation 64
Implications of the Study 70

Bibliography 72

CHAPTER I

THE IMPORTANCE OF THE AREA STUDIED

This is a study of people's judgments of the opinions of groups. The term "group opinion" is defined as the percentage of a group that agrees with a defined statement. Consequently, an individual's judgment of the opinion of a group is his estimate of the percentage of that group that would agree with a given statement.

It is maintained that the area is an important one because most people need to make judgments of group opinion in their daily lives. The ability to judge group opinion plays an important part in the successful pursuit of many occupations. In this connection, administration and teaching are fairly obvious examples of types of work in which it is necessary to make accurate judgments of group opinion.

In a democracy, the task of the administrator is to serve, not to rule, and consequently it is his duty to know the opinions of those he serves with respect to various possible policies. In other kinds of social systems, it is probably less important for the administrator to base his policies on his judgments of public opinion, for under such systems efficient propaganda ensures that public opinion will usually be 100% behind the administration, at least on the surface. But even in such Machiavellian social systems, where the function of administration is the classic one of intelligently anticipating agitation, it is important that the administrator should be able to judge accurately the opinion of groups if either he or his administration is to survive. Whatever be the social structure within which the administrator must work, judgments of group opinion must function as a lodestar both in social crisis and in times of tranquillity.

It is true, of course, that in recent times administrators, and especially national administrators, have been aided in their judgments of public opinion by the development of the technique of the straw ballot. Unfortunately, owing to the cost of this method of obtaining information and the highly skilled staffs needed, if reliable and satisfactory results are to be obtained, the technique is not of great value in helping most administrators to make their day to day decisions, although such ballots may help in drawing up national policies. Unfortunately, many administrators are not always encouraged to make use of sample ballot materials and many public figures have expressed their distrust of them. It is of interest to note, however, that the majority of those who have expressed their distrust of the straw ballot procedure seem to believe that their own judgments of public opinion are accurate.

Administrators are usually selected on the basis of their achievements in other fields. It has usually been assumed that success in non-administrative work is a good indicator of success in administrative work. But there is no evidence as yet to support the view that the special abilities which the administrator needs, such as the ability to judge the opinions of groups, are closely correlated with other abilities. Consequently, it is a matter of considerable importance to determine the kind of people who possess the ability to judge the opinions of groups.

The teacher as well as the administrator needs to be a good judge of group opinion. It has been emphasized in the past that the teacher must be a successful judge of the level of knowledge of the students if the instruction given is to be effective. If the classroom teacher misjudges the level of knowledge of the students, the instruction given may be either so far above their heads as to be meaningless or so far beneath them that it wastes their time. In education today, however, less and less stress is being placed on the informational objectives of instruction and teachers are becoming more concerned with directing and changing the attitudes, interests, and opinions of their students. Consequently, while it is still necessary for teachers to make judgments concerning the knowledge of those they teach, they also need to make judgments of attitudes, interests, and opinions. If attitudes and opinions are to be changed through teaching, the teacher must be able to judge the opinions of the student group in order to know how to direct his teaching. No doubt, many teachers using traditional methods have always recognized that it is necessary to take account of the opinion of students if a satisfactory and friendly relationship with the students is to be achieved, but it is only in recent times that wide recognition has been given to the teacher's need for knowledge of this kind.

It is important for the teacher and educator to be able to make accurate judgments of group opinion for another reason. Such judgments form the basis of evaluation in many "progressive" schools. It is generally agreed that the success of the educative process is determined by the degree to which the objectives of the teaching are realized. The outcomes of teaching of the traditional kind can be fairly easily and accurately measured through the use of subject matter tests and tests of skills. The measures provided by such tests appear to be reasonably valid and adequately reliable. But the outcomes stressed by many teachers today are often of the kind which can be achieved only through changes in the value judgments made by the students, and such changes are not easily measured, although quite often measurement is possible. It is an accepted practice today for the teacher to determine whether such objectives are being achieved by judging the changes which take place in the opinions of the student group. Indeed, there are many ''progressives'' in education who believe that such judgments on the part of the teacher should be the only method of evaluation, since methods for measuring non-informational objectives are neither as valid nor as reliable as one might wish them to be. However, those who advocate basing all evaluations of the educative process on judgments made by teachers tacitly assume that such judgments are valid and reliable. This is well illustrated by a remark made to the present writer by one such ''progressive'' teacher who said that he did not need evaluation instruments to measure changes in the attitudes and opinions of his students since he knew what changes took place. It is odd that those who mistrust tests and measures should feel so confident in their own ability to judge group opinion and in the ability of others to do the same. Little is known about the accuracy of such judgments, nor is it known whether some people are superior judges to others, yet entire programs of curriculum reconstruction are often based on the assumptions that all such judgments are accurate and that all teachers are good judges.

This brief discussion serves to illustrate that a study of people's judgment of the opinions of groups is concerned with a matter of practical importance. Judging group opinion is no mere academic pursuit. It plays a highly significant part in the lives of many people in the successful pursuit of their work. But in the lives of all, it plays some part, for it has been demonstrated that there is a tendency for most people to conform to what they believe are the opinions of these with whom they live and work. The experiments by Moore (7) and Marple (6) as well as common observation indicate that the individual tends to modify his opinions to make them conform to those of the group with whom he identifies himself. Consequently, in the small and everyday adjustments which occur between the individual and his group, the ability to judge group opinion must play an important part. It is possible that some individuals may have difficulty in making their social adjustments because they are constantly misjudging group opinion. Unfortunately, however, this cognitive aspect of social adjustment has remained not only ignored but also unrecognized by most clinical psychologists, although Thorndike has pointed out that there seems to be an ability which he calls social intelligence, which is but little related to abstract intelligence. Thus study in this field may contribute to a better understanding of the forgotten role of cognition in social adjustment.

Research in Related Fields and Its Bearings on the Present Study

A search of the literature in psychology did not reveal any studies directly concerned with judgments of group opinion.[1] However, although there seem to be no studies concerned with the kind of judgments under consideration, there are numerous studies concerned with judgments in other areas. Most of these studies but not all have been concerned with the important task of judging personality traits.

It is worth while reviewing these studies, for judging group opinion and judging personality traits and judgments in general have certain common qualities. They all involve tasks where the selection of relevant cues is difficult and where the cues selected are rarely adequate for drawing a conclusion which is definitely true. When an individual states "I judge this to be such and such," he invariably means "I have made use of all the cues I can find and conclude that the general indication is that such and such is the case." This description applies regardless of whether an individual is judging group opinion, a personality trait in another individual, or the qualities of a piece of literature.

During the last 35 years, various investigators have tried to determine the nature of the subjective processes which result in errors of judgment. Certain special errors of judgment had received attention from Wundt and other early workers in experimental psychology. These errors were mostly of the type known as perceptual illusions and were attributed to faults in the apperceptive process. The decline in interest in the form and content of mental processes which took place in the early decades of the present century and the increasing emphasis on the study of social behavior resulted in a shift in the experiments in this field from those designed to study simple perceptual errors to those which were designed to reveal the errors involved in judging human nature.

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[1] Since this present study was written, Dr. Richard Wallen of the University of Cincinnati has announced that he has been working in the same field as the present writer. A preliminary report of his work was given at the 1941 meeting of the American Psychological Association. He has been good enough to let me read the full report of his work. In the next chapter his work is acknowledged when it overlaps the present study.

In 1915, Hollingworth (1) and his associates performed their classic series of experiments on the ability to judge personality traits and to rate them accurately. They found, amongst other things, that subjects showed certain constant errors in self-ratings, such as under-rating themselves on undesirable traits and over-rating themselves on desirable traits. The data also suggested that those who did well on intelligence tests were good judges of intelligence in others, but that they were not necessarily good judges of any other traits. Consequently it seems quite probable that the ability to judge group opinion may be quite unrelated to intelligence.

In the same year, another worker, E. Webb (13), noted a curious effect which seemed to influence most judgments of personality. In a study of personality he found that the judgment of any quality may be affected favorably by the presence of desirable qualities, and adversely by the presence of undesirable qualities.

A similar kind of observation had been made eight years previously in a different field by Wells (14) who was working on literary criticism. In his study, the style of ten American authors was graded with respect to ten literary qualities. He found a rather disturbing error occurring in his measures. He found that the ratings on each of the qualities seemed influenced by the general merit of the style under consideration. This was especially true of those qualities which were ill defined in the minds of the subjects. As a result, the ratings on different qualities seemed to be correlated rather more closely than was the actual case.

This same tendency for judgments of personality traits to be highly correlated was also observed by E. L. Thorndike (11) in 1920 who noted that judges ''were apparently affected by a marked tendency to think of a person in general as rather good or rather inferior and to color the judgments of the qualities by this general feeling.'' Similarly, outstanding features of an individual influenced people's judgments about his other qualities. Thorndike named this phenomenon ''halo'' and the term has been used widely in this connection ever since.

In the years which followed, numerous examples of this halo phenomenon were found. In 1921 and in the year following, Rugg (8) published the analysis of the results of the use of the Army Rating Scale. On the basis of these data, Rugg concluded that "we tend to judge our fellows in terms of a general mental attitude toward them," and that "there is dominating this mental attitude towards the personality as a whole a like mental attitude towards particular qualities."

These difficulties encountered by judges in analyzing the situation for the purpose of making judgments has been stressed also by Knight (4) in his study of ratings of teachers, by teachers, supervisors and pupils, and the difficulties these raters encountered in separating one personality quality from the general personality configuration. He concluded that "a judge has a certain opinion of a teacher in toto and this opinion is given according to the general impression in answer to any significant question about that teacher. Thus the general estimate can be taken to permeate all particular judgments and conversely, particular judgments are simply defenses for, or justification of, the general opinion which has thus been held."

All these studies indicate that when an individual organizes a field for the purposes of making a judgment, the whole organization may be completely dominated by one outstanding feature which may be irrelevant but which may nevertheless mask the relevant cues or even hide them completely. The tendency for irrelevant material to influence a judgment was also demonstrated by Lorge (5) in a study of the consequence of the prestige of an author on the evaluation of his ideas. This study deserves description in the present connection because it brings out the point that judgments are influenced by irrelevant material especially when the material has emotional significance for the person who is making the judgment. The experiment consisted of three parts. First the subjects were asked to rate fifteen prominent names associated with politics on a five-point scale, according to the respect the subject felt for their opinions. Secondly, the subjects were asked to rate one hundred statements made by each authority on a five-point scale of agreement-disagreement. With each statement, two names were given, one of which was the correct author. The subject was asked to choose from the two names the one which he thought was the author of the statement. Thirdly, after a few weeks had elapsed, the subjects were given again the list of one hundred statements, but this time only the real authors were given. They were asked to rate each statement on the same scale as in the first part of the experiment.

The results of the experiment showed that in those cases where the subjects respected the author of the statement there was a marked tendency for them to express a greater degree of agreement than when they had little respect for the author.

If, in the first part of the experiment, a statement had been attributed to an author for whose opinion the subject had little respect and if in the second part of the experiment the true author turned out to be one for whom the subject had great respect, then the rating tended to shift to the positive end of the scale. The degree to which the individual's judgment of the quotation was influenced by the name of the author ascribed to it was shown to depend on the degree to which that author was held in prestige in the mind of the subject. This is analogous to what is found in judging personality—outstanding traits for which a judge has a special liking or aversion will color his judgment of all other traits.

Before discussing the relevance of these studies and their conclusions to the present study, it is worth pointing out one more aspect of the halo phenomenon, namely, that many of the experimental findings which have been discussed in terms of halo could be discussed as well in terms of projection, as for example the Lorge study. In general, when judgments are affected by the judge's own personal qualities, the term projection has been applied, but often it is quite impossible to decide whether a phenomena should be referred to as halo or as projection. Whichever terms are used, however, it is worth noting that there is good evidence in various studies, and especially in those by Sears (9 and 10) that an individual's own traits will influence his judgment of those traits in others. Consequently, one might expect that an individual's own opinion would affect his judgment of group opinion either by halo or by projection, and this seems to be an hypothesis worth testing in the present study.

Apart from the hypothesis just stated, the studies discussed in the last few pages suggest that specific judgments of group opinion would be largely determined by general judgments. For example, in judging the opinion of a group with respect to these issues that divide liberals from conservatives it might be expected that such judgments would be made in terms of some general judgment with respect to the liberalism of the group.

From the Rugg (8) study of the results of the Army Rating

Scale, there emerged another interesting fact which has not been mentioned previously in this chapter. It is that the mean judgment of a number of judges of a personality trait tends to be a fairly good measure of the trait being judged. It seems of interest to determine whether this is true also of judgments of group opinion.

Finally, in judging personality, there seems good evidence that some judges are consistently better than others. It seems then worth determining whether some individuals are consistently better judges of group opinion, for as was pointed out previously, this is a matter of fundamental importance in the selection of administrators.

Questions Which the Study Aims at Answering

The discussion of the importance of the ability to judge group opinion raised various questions to which an answer seems to be a matter of practical importance. The review of the literature in related fields suggested some possible answers, which also may be stated in the form of questions. The questions, together with others which, on the basis of general considerations, seemed worth answering are listed here:

Is the opinion of an individual related to his judgment of group opinion?

Is the degree to which an individual feels strongly about an issue related to his judgment of group opinion?

Are men and women equally good judges of group opinion?

Do these individuals who tend to make large errors in judging group opinion with respect to one kind of issue also tend to make large errors in judging group opinion with respect to other kinds of issues?

Is the ability to judge group opinion related to measures of intelligence?

Is the ability to judge group opinion related to measures of social and emotional adjustment?

Do the members of minority groups tend to make smaller or larger errors than the members of majority groups, in judging group opinion?

These are the main questions which the experiments described in the next two chapters are designed to answer. Other questions arose as a result of handling the data and these will be stated as they arise and answered wherever possible.

CHAPTER II

THE METHOD OF STUDY

The general technique which has been adopted in this study of the ability to judge group opinion is as follows: First a group of individuals is presented with a set of propositions. Each individual is asked to express his own agreement or disagreement with each of these propositions and then to estimate the percentage of the group or of some other group which would agree or disagree with each of these propositions. It is then possible to relate an individual's errors in his judgment of group opinion to other variables. It will be remembered that for the purposes of this study, group opinion has been defined as the percentage of a given group agreeing with a given proposition.

Since it seemed of little interest to study instances in which judgments of group opinion were complete guesses, the selection of suitable propositions depended entirely upon the group about whom judgments of public opinion were to be made and on the individuals who were to make these judgments. For example, if an individual was plunged suddenly into the midst of a gathering of university professors and asked to judge the percentage of the group that would favor government ownership of public utilities, the problem might be a baffling and insoluble one if the subject had never met university professors and knew nothing of this group of professors in particular. On the other hand, any one who had heard this group discuss topics such as socialized medicine, the New Deal, and the National Association of Manufacturers might have some basis for judging the general position of the group with respect to government ownership of public utilities. Of course, in many cases it is quite possible to judge the opinion of a group without knowing a great deal about their background from direct sources. For example, one might guess that the typical attendance at some expensive charity ball would not be overwhelmingly in favor of government ownership of banks.

The basis on which the opinion of groups may be judged are so infinitely varied and numerous that they cannot be listed here. They include, apart from matters of speech and conversation, things such as dress, color, sex, and age. Anyone who has been with any group for just a few moments can judge the opinion of that group about some things but not all things. Most people could judge the opinion of most groups about some issues. The issues about which one is able to judge depends upon the kind of group whose opinion is being judged, the judge himself, and the relation of the judge to the group.

A group of teachers taking post-graduate courses in Teachers College was asked to cooperate as subjects for the first part of this investigation. The group consisted of a class of about 200 students; all were taking the same course which requires a class attendance of three hours a week. The first part of each session consists of a lecture given by a member of the faculty on some aspect of contemporary society in relation to education. This is followed by a discussion of this topic by the students themselves and amongst themselves without the faculty being present. For this part of the class's program, it is usual for the students to break up into smaller groups. Lastly, faculty and students reassemble and engage in a general public discussion of the topic for the day. During these sessions, much time is devoted to a discussion of the broad social and political issues which face mankind today. Hence, each member of this group would have some basis for judging the opinion of the class as a whole on the controversial issues which divide liberals and conservatives and those which have received some general publicity.

On this basis, a list of 25 issues was drawn up. It was believed that on each of these issues there would be some basis for judging where the opinion of the class would lie, provided the person making the judgment had worked with the class during the semester.

The subjects were asked to do three things with a list of issues:

First—they were asked whether they were in favor of or whether they were not in favor of each of these propositions by checking a "Yes" or a "No."

Secondly—they were asked to give what they thought would be the percentage of the class that would be in favor of each of these propositions.

Thirdly—when they came to the end of the list, they were told to go back and underline all those issues "about which you yourself feel strongly."

At the time when the group was asked to undertake this task they had worked together for a period of 11 weeks. The propositions in this first part of the questionnaire were as follows:

PART I

1) Are you in favor of the abolition of capital punishment?
2) Are you in favor of outlawing the Communist party?

3) Are you in favor of socialized medicine?
4) Are you in favor of Prohibition?
5) Are you in favor of compulsory school attendance up to the age of 18?
6) Are you in favor of Government ownership of railways?
7) Are you in favor of compulsory unemployment insurance for all?
8) Are you in favor of a maximum 35-hour working week?
9) Are you in favor of raising the age at which an individual may vote to 25?
10) Are you in favor of Government banks?
11) Are you in favor of married women working outside the home?
12) Are you in favor of Government control of the telephone service?
13) Are you in favor of Government control of electric power?
14) Are you in favor of excluding controversial social problems from the school curriculum?
15) Are you in favor of fingerprinting all citizens?
16) Are you in favor of the sterilization of habitual criminals?
17) Are you in favor of stopping all further immigration to the United States?
18) Are you in favor of enforcing soil conservation practices by law?
19) Are you in favor of permitting inter-marriages of white and colored people?
20) Are you in favor of legalizing birth control clinics?
21) Are you in favor of equal wages for men and women in the same jobs?
22) Are you in favor of extending the "Easy Divorce" laws of Nevada to other states?
23) Are you in favor of abolishing privately owned schools?
24) Are you in favor of limiting the number of Jews admitted to public universities to a certain proportion of the total number of students?
25) Are you in favor of admitting Negroes and Whites on the same basis to all public universities?

To this list was added a second list of propositions. This time as before the subjects were asked to express their own opinion by checking a "Yes" or a "No," but they were then asked to judge the percentage of the adult population of the United States that would answer "Yes" to each of these propositions. As in the previous case, the subjects were instructed at the end of the list to go back and underline all those about which they felt strongly.

This second list of propositions was as follows:

PART II

1) Are you in favor of labor unions?
2) Are you in favor of Government old age pensions?
3) Do you think old age pensions should be given only to old people who are in need?
4) Do you think freight trucks should be kept off highways during certain hours on Sundays and holidays?
5) Do you approve of a married woman earning money in industry or business if she has a husband capable of supporting her?
6) If the question of national prohibition should come up again, would you vote for it?

7) Do you believe in the death penalty for murder?
8) Should Congress enact a law which would make lynching a Federal crime?

A great deal is known about the opinion of the general public on these issues. They are questions which have been asked several times in the Gallup poll. For example, the first of these questions was asked during some of the early Gallup polls. In July 1937, 76% of the general public said that they were in favor of labor unions. In June 1939, this figure was 70%. In December 1939, it was 74%. We have two estimates for the second proposition. The first in September 1938 gives a value of 91%. The second in February 1939, 94%. These Gallup poll results and the results for the other six propositions are shown in Table I.

These Gallup poll questions were chosen for the present purpose either because the public has shown a fairly stable attitude towards them when polls have been repeated or because they were the kind of issues towards which public opinion would be likely to change but little as a result of the recent turbulent and catastrophic events.

TABLE I

GALLUP POLL RESULTS: PERCENTAGE RESPONDING "YES"

Proposition	*Percentage responding "Yes"*	*Date*
Are you in favor of labor unions?	76 70 74	July, 1937 June, 1939 December, 1939
Are you in favor of Government old-age pensions?	91 94	September, 1938 February, 1939
Do you think old-age pensions should be given only to old people who are in need?	79 77	September, 1938 November, 1939
Do you think freight trucks should be kept off highways during certain hours on Sundays and holidays?	73 67	August, 1938 December, 1939
Do you approve of a married woman earning money in industry or in business if she has a husband capable of supporting her?	18 22	November, 1936 November, 1938
If the question of national prohibition should come up again, would you vote for it?	33 34 36	December, 1936 February, 1938 December, 1938
Do you believe in the death penalty for murder?	61 65	January, 1937 January, 1938
Should Congress enact a law which would make lynching a Federal crime?	70 72	January, 1937 November, 1937

From the *Public Opinion Quarterly*, Vol. 2, No. 3, July 1938; Vol. 3, No. 4, October 1939; Vol. 4, No. 1, March 1940. This Journal gives complete summaries of the published results of the *Fortune* and Gallup polls.

These Gallup poll results were used as the criterion of the actual opinion of the American public. Since there is some variation in these estimates of public opinion, due to some extent to the difficulties involved in obtaining a representative sample of the adult population of the United States, an arbitrary rule was established to the effect that the latest of these estimates would be taken as the best estimate of public opinion at the time of the experiment. For the present purpose, however, the variation in public opinion from poll to poll is small compared with the variation in the judgments of public opinion of the subjects and the former variation is hence quite unimportant.

In addition to the information asked in Parts I and II, a third part of the questionnaire asked for some information about the individual's name, age, and sex.

No compulsion was placed on the group to fill out the questionnaire. It was introduced to the group by the Professor in charge of the class who said a few words about its purpose. A letter was sent to each member of the class four days later asking them to return the questionnaire as soon as possible. As a result 102 copies were returned of which 80 were correctly and completely filled in. The remainder were incorrectly and incompletely filled in, the common omission being the judgments of public opinion. These omissions may have been due partly to the unusual nature of the task. Most of these students had had some previous experience with attitude scales and therefore completed that part of the questionnaire where "Yes" or "No" answers were required as a matter of routine, but neglected the remainder of the directions. Several subjects stated that it was easier to estimate the percentage of the group that would respond to each proposition in the way they had responded than to estimate the percentage that would respond "Yes." This may possibly indicate a tendency for individuals to think of a group in terms of that portion of the group with which they can identify themselves. However, be this as it may, this point was made use of in another study described in the next chapter.

THE VARIATION IN JUDGMENTS OF GROUP OPINION

Usually the subjects judged both the opinion of their own group and the opinion of the total population of the United States in terms of ten percents. That is to say, judgments were in terms of 10%, 20%, 30%, up to 100%. A few of them tried to make their judgments in terms of five percents, and a few used a five point scale of

0, 25, 50, 75, and 100 percents. A few of them added to the 10% scale common fractions such as 25%, 50%, 75%, 33⅓%, 66⅔%. This would indicate that most of the subjects felt that they could judge the population within 10%.

The variation in the judgments given about any single proposition is great. They usually extend over nine-tenths of the scale. For example, when the individuals were asked to judge what percentage of the group would be in favor of raising the age at which an individual may vote to 25, they judged the group to be anything from 0% to 95% in favor of this proposition, although in this case, a majority of the judgments fell in the range between 0 and 20%. The distribution of these judgments is shown in Figure 1.

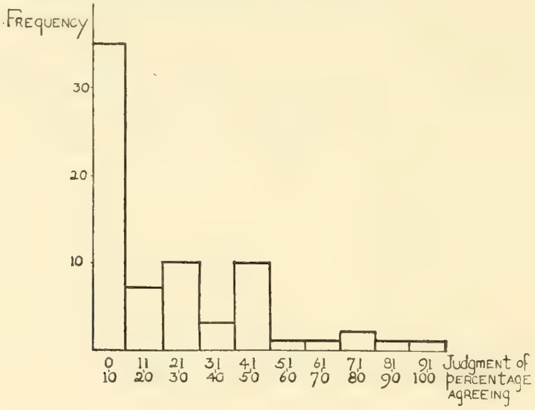

Fig. 1. Distribution of the judgments of the percentage of the group responding affirmatively to the question, "Are you in favor of raising the age at which an individual may vote to 25?"

Figure 2 shows the distribution of judgments of the individuals about the opinion of the group regarding the statement "Are you in favor of equal wages for men and women in the same jobs?" In this case, the judgments are more equally distributed over the whole scale. Similarly, in cases where the individuals were asked to judge the opinion of the population of the United States on various issues, the distribution of judgments shows approximately the same variation. When the group was asked to judge the opinion of the general population on the issue "Do you approve of a married woman earning money in industry or business if she has a husband capable of supporting her?" their opinions varied from 0 to 80% in favor of the proposition. Similarly, the judgments of this group with respect to the opinion of the general public about the question "Are you in favor of Government old-age pensions?" is shown in Figure 4.

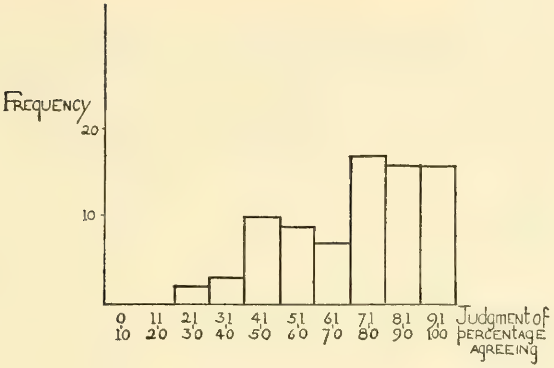

FIG. 2. Distribution of the judgments of the percentage of the group responding affirmatively to the question, "Are you in favor of equal wages for men and women in the same jobs?"

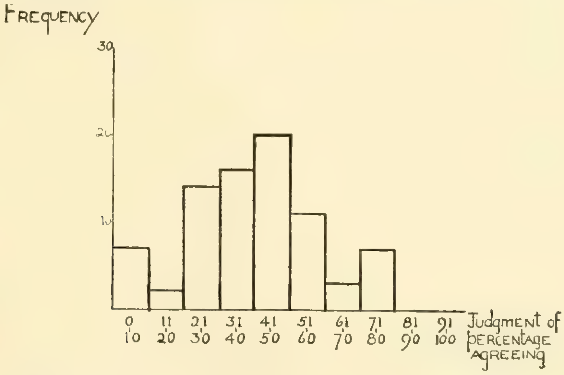

FIG. 3. Distribution of the judgments of the percentage of the adult population of the United States responding affirmatively to the question, "Do you approve of a married woman earning money in industry or business if she has a husband capable of supporting her?"

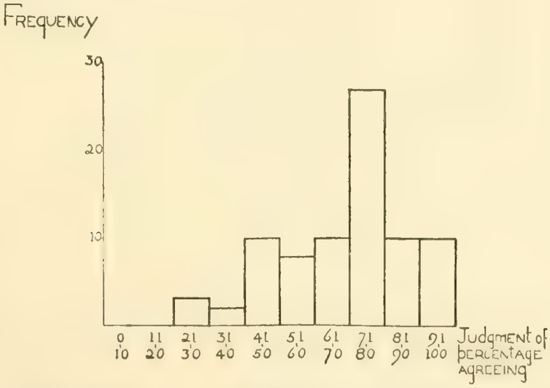

FIG. 4. Distribution of the judgments of the percentage of the adult population of the United States responding affirmatively to the question, "Are you in favor of Government old-age pensions?"

Now it should be noted that this is an intelligent group, or at least a group whose intelligence on any standard test would be above that of the national average. They are also a group who take some interest in current affairs, and during the 11 weeks preceding the time when the questionnaire was given, they had had a special incentive to study contemporary society since the course they were taking stressed the need for taking an interest in current events. We know too that they are a newspaper reading public. All reported that they were regular readers of at least one daily paper. Also, since many of them had actual teaching experience, one would expect them to be more closely in touch with general public opinion and be more sensitive to its changes than any representative sample of the population.

It seems probable then that the kind of issues on which the members of this group were asked to judge both the opinion of their group and the opinion of the general public are mostly the kind of issues about which they would be most capable of making such judgments. The fact that these judgments for any single issue vary tremendously indicates that the majority of people cannot judge group opinion with any accuracy even in those areas where they should be most capable of making judgments. It is probable that most people think that they have a far greater ability to judge group opinion and public opinion than they really possess. It is probably analogous to the case of personality judgments where most people feel that they are capable of making quite accurate judgments about other people's personalities, and yet the facts reveal that such judgments are subject to enormous errors.

Table II gives the mean of the judgments of the group and the opinion of the group as estimated from the opinions given in the 100 questionnaires which were returned for the first 25 propositions of Part I. It will be noted from this table that the selection of propositions was fortunate in that group opinion with respect to them covered most of the possible range from 0 to 100%. A casual glance indicates that the mean judgment of group opinion is fairly closely related to the actual value of group opinion.

The relationship between the mean of the judgments and the opinion of the group is more easily seen in Figure 5. This demonstrates quite clearly the closeness of the correlation between the mean judgment of group opinion and the actual opinion of the group. Again it may be noted that there is an analogy between these kinds of judgments and judgments of personality. In both

TABLE II

Comparison of the Means of the Judgments of the Group with the Opinion of the Group in Part I of the Questionnaire

Item Number	*Mean of Judgments*	*Group Opinion*
1	56	59
2	46	39
3	65	81
4	19	20
5	72	76
6	47	58
7	71	85
8	54	57
9	20	13
10	46	69
11	62	70
12	41	52
13	48	65
14	21	3
15	64	79
16	58	69
17	35	13
18	76	94
19	17	34
20	68	86
21	73	90
22	33	21
23	27	7
24	32	21
25	65	89

cases, individual judgments are liable to large errors but the mean of all judgments is fairly closely related to the qualities of the thing being judged.

Some acute observer may note that the correlation demonstrated in this diagram may be due largely to an artifact of the situation

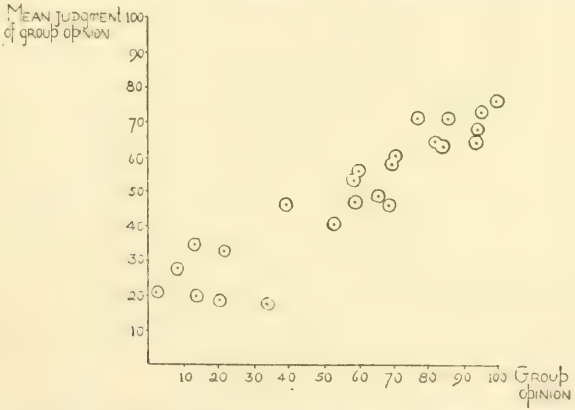

Fig. 5. Showing the relationship between the mean of the judgments of group opinion on each of the first 25 issues and the actual opinions of the group.

and hence may be spurious. However, it will be shown later that only a very small portion of this total correlation is spurious and that the major part is a genuine correlation not due to the intrinsic nature of the situation. The correlation between the mean of the judgments and group opinion is 0.929 for the 25 items in Part I.

Table III compares the mean of all judgments of public opinion on the 8 items in the 2nd part of the questionnaire with the actual opinion of the public as derived from the Gallup poll results. The 3rd column of this table gives the Gallup poll results on each of these questions. In this table, the relationship between the mean of all judgments and the Gallup poll results is difficult to see because most of the items are concerned with things which most people favor and hence the distribution of means is bunched up towards the 100% end of the scale.

TABLE III

MEAN OF ALL JUDGMENTS OF PUBLIC OPINION, THE PERCENTAGE OF THE POPULATION RESPONDING "YES" AT THE MOST RECENT GALLUP POLL, AND THE PERCENTAGE OF THE GROUP STUDIED RESPONDING "YES"

Item Number	*Mean of All Judgments of Public Opinion*	*Gallup Poll Result*	*Percentage of Group Studied Responding "Yes"*
1	65	74	90
2	70	94	92
3	55	77	67
4	55	73	63
5	41	22	52
6	32	36	22
7	58	65	39
8	58	72	88

It had been anticipated that the members of this group might tend to judge the larger national group in terms of the characteristics of the group with whom they were working at the time when the present study was made since it represents the kind of group with whom they are in daily contact. Table III, however, does not support this hypothesis for there is no marked tendency for the means of all judgments of public opinion to be closer to the opinion of the group than to the Gallup Poll result.

Figure 6 shows the relationship between the mean of all judgments of public opinion and the Gallup Poll results. Owing to a paucity of points, it would be difficult to draw any very definite conclusions from this figure. It would seem, however, that one might legitimately guess that the correlation would be high if there

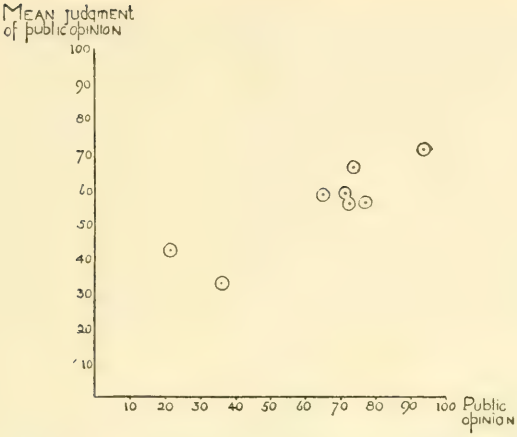

FIG. 6. Showing the relationship between the mean of the judgments of the opinion of the adult population of the United States and public opinion as determined by the Gallup Poll.

had been more points to plot. In this case, any correlation which does exist is genuine.

RELATIONSHIP BETWEEN AN INDIVIDUAL'S OWN OPINION AND HIS JUDGMENT OF GROUP OPINION

In view of the studies and researches discussed in Chapter I, it seemed probable that a major factor in determining an individual's judgment of the opinion of any specified group would be his own opinion regarding that proposition or issue. In designing the present experiment, this was kept in mind and it will be recalled that each subject was asked to judge not only the percentage of the group that would agree with each statement but also to give his own opinion in terms of a "Yes" or a "No" response.

Table IV shows the mean judgment of group opinion of those answering "Yes" to each proposition and the mean judgment of group opinion of those answering "No" to each proposition. It will be seen that in every case those who agreed with the proposition thought that more people were in favor of it than those who disagreed. The answer is so clear-cut that there is no need for calculating the significance of these differences. The mean difference is 22.88% for the first 25 items. It should be noted that in the items of Part I, there are 20 cases out of 25 in which the mean judgment of those answering "Yes" was greater than 50% while in 22 cases out of 25 the mean judgment of those answering "No" was less than 50%. In general, then, there seems to be a marked tendency

TABLE IV

MEAN OF THE JUDGMENTS OF GROUP OPINION OF THOSE ANSWERING "YES" AND THOSE ANSWERING "NO" TO EACH PROPOSITION

Item Number	*Mean of Those Answering "Yes"*	*Mean of Those Answering "No"*
	Part I	
1	66.1	43.8
2	57.9	38.5
3	70.1	47.8
4	32.9	16.9
5	81.2	46.6
6	54.3	38.5
7	74.5	47.5
8	67.0	36.5
9	43.7	17.1
10	54.6	27.7
11	70.8	47.5
12	52.5	29.2
13	58.0	31.3
14	34.2	20.5
15	71.7	35.0
16	67.9	36.5
17	53.1	32.8
18	77.8	56.5
19	26.1	17.4
20	69.9	53.5
21	73.7	63.1
22	50.4	27.8
23	62.5	25.3
24	48.6	27.5
25	67.0	49.2
	Part II	
1	65.4	62.5
2	70.5	62.5
3	60.4	44.6
4	65.0	38.3
5	43.7	37.6
6	45.0	29.8
7	63.3	50.3
8	60.4	45.0

for people to believe that their opinion corresponds with the opinion of the majority.

Dr. Richard Wallen in his study, carried out simultaneously and independently of the present one, found an identical phenomenon to exist. His group represented the student body of a small college. His differences between the "Yes" and the "No" group are, however, rather smaller. He attributes this to the fact that the members of his group were better acquainted with each other than were the members of the group in the present study.

In general, it may be said that the opinion of an individual is correlated with his judgment of group opinion to a very significant degree. This correlation explains numerous situations which arise. For example, at a recent meeting of the Youth Congress in Washington, one speaker who held the majority viewpoint of the Congress stated that 90% of the youth of the country shared the same views as he did. The next speaker held opposite points of view but he stated that he was certain that 85% of the American youth looked upon things in the same way as he did. In this case as in many others, the sincerity of the speakers cannot be doubted and it is difficult to believe that either of them were trying deliberately to misrepresent the facts. Each was an example of the tendency for an individual's judgment of group opinion to be correlated with his own opinion.

The data presented in this chapter show that such errors of judgment are the normal thing and that a major factor in determining one's judgment of group opinion on any more or less specific issue is one's own opinion. This was found to be the case both in judgments about the class as a whole and in judgments about the adult population of the United States.

A common way of representing such a relationship is through the calculation of biserial correlations. Table V shows the correlation between the individual's own opinion and his judgment of group opinion for each of the 25 items in Part I and each of the 8 items in Part II. This table presents the same data as in Table IV but in a form which shows in a convenient way the extent of the relationship.

It will be noted that the correlations of judgments which refer to the group with personal opinions vary from .289 to unity. It would have been expected that the correlation in this instance would depend to some extent on the vagueness of the statement and the difficulty with which group opinion with reference to that statement could be judged. A comparison of the instances where the correlation is high with the instances where the correlation is low does not reveal any obvious relationship of this kind. The statements with the three highest correlations dealt with admitting negroes and whites on the same basis to all public universities, Government banks, and fingerprinting all citizens. The statements with the lowest correlations dealt with excluding controversial social problems from the school curriculum, equal wages for men and women in the same jobs, and permitting intermarriage of white and colored people.

There seems to be, however, a tendency for the correlations in

TABLE V

CORRELATION (BISERIAL) BETWEEN THE OPINIONS OF THE SUBJECTS AND THEIR JUDGMENTS OF GROUP OPINION

Item Number	*Biserial Correlation*
Part I	
1	0.557
2	0.470
3	0.589
4	0.378
5	0.833
6	0.423
7	0.679
8	0.705
9	0.633
10	0.834
11	0.623
12	0.575
13	0.621
14	0.234
15	0.717
16	0.698
17	0.420
18	0.479
19	0.359
20	0.372
21	0.289
22	0.494
23	0.623
24	0.455
25	1.000*
Part II	
1	0.062
2	0.227
3	0.378
4	0.626
5	0.203
6	0.343
7	0.429
8	0.432

* As in many cases where p is large or very small, biserial r may exceed unity. In this case, the calculated r was 1.281 due to an inaccuracy in the table for high or low values of p. The method used is that described by J. W. Dunlap in his "Note on Computation of Bi-Serial Correlations in Their Evaluation," *Psychometrika,* Vol. I, No. 2, June 1936, pp. 51–60.

the second part to be slightly lower than those in the first part. The significance of the difference of the mean value of the correlations in Part I with the mean value of the correlations in Part II is indicated by a calculated value of t equal to 0.9712 which is below any of the ordinary levels of significance. It is possible, of course, that the judges of group opinion knew more about the opinion of the public with respect to the issues in Part II than they did about the opinion of their own group with respect to the issues in Part I.

A greater correlation might have been anticipated in the case of Part I since judgments are being made concerning a group with whom the judges are more closely identified. It is obvious that in cases where people really knew public opinion that their judgments of it, being near to perfect, would not be correlated with their own opinions. Hence it follows that the influence of the individual's own judgment will be proportional to his own ignorance about group opinion.

It does not follow either from what has been said nor from the data presented that an individual's own opinions have any direct influence on his judgment of group opinion. The only thing that has been demonstrated is an association. One might expect that an individual's judgment of group opinion might have some direct influence on his judgment of the opinion of groups.

However, the correlations in Table V may be interpreted in a different way. Each individual in a group of 56 students would be much better acquainted with some students than with others. It might reasonably be expected that individuals with similar opinions would tend to be grouped together socially. The variation within these sub-groups would be less than the variation between the sub-groups in most matters of opinion. Consequently, each individual would tend to see around him a group of people holding opinions similar to his own. Since he would be only remotely acquainted with those of different opinions, his picture of the group as a whole would over-emphasize the number of people with whom he was in agreement. Consequently, there would be a tendency for there to be a correlation between his own opinion and his judgment of group opinion. This possibility must be kept in mind in interpreting these results and although it may not account for the entire correlation between the individual's own opinion and his judgment of group opinion, it may account for at least a part of it. This acquaintanceship factor will be discussed at greater length in the next chapter.

It was mentioned previously that part of the correlation between the mean judgment of the group as a whole and the actual opinion of the group might be due to some extent to a spurious factor. This factor is the relationship between an individual's opinion and his judgment of group opinion. In cases where nearly every subject answered "Yes" to a proposition, the percentage of the group favoring that proposition would be high and the mean judgment would be biased towards the 100% mark. A similar state of affairs would exist where the majority of the group answered "No." Thus a spurious correlation might occur where no real correlation existed. It can be shown, however, that the correlation between the mean of the judgments of the individuals with actual group opinion is not on the whole due to this phenomenon but is a genuine correlation.

The correlation between the mean of those answering "Yes" to each proposition with the opinion of the group for the first 25 items was found to be 0.809. The correlation between the mean judgments of those answering "No" and the opinion of the group was found to be 0.940.

These relationships are represented graphically in Figure VI for the items in Part I of the questionnaire. The points in the circles represent the mean judgment of those answering "Yes" and

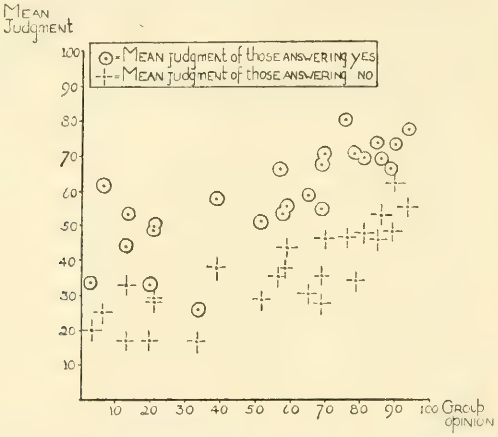

FIG. 7. Showing the relationship between the means of those responding "Yes," the means of those responding "No," and group opinion for the first 25 statements in the questionnaire.

the crosses represent the mean judgment of those answering "No." It is of interest to note how the regression lines of the two groups run practically parallel to each other, differing from each other by a constant. It can also be seen fairly clearly that the standard deviation of the variable represented by the horizontal coordinate is less than that represented by the vertical coordinate. This is due to a scarcity of judgments at the extreme ends of the scale.

The tendency for people to overestimate the percentage of the group that thinks as they do is seen fairly clearly in this figure. Similarly, the reverse tendency for people to underestimate the number of those that disagree with them is also obvious. The general correlation between an individual's own opinion and his judgment of group opinion is clearly demonstrated.

THE DEGREE TO WHICH AN INDIVIDUAL FEELS STRONGLY ABOUT AN ISSUE AS A FACTOR DETERMINING JUDGMENTS OF GROUP OPINION

It will be recalled that the subjects were asked to underline those issues about which they felt strongly. By this means, it was anticipated that it would be possible to test whether the fact that a person felt strongly about an issue resulted in a greater correlation between his own opinion and his judgments of group opinion than in cases where he did not feel so strongly.

TABLE VI

MEANS OF THE JUDGMENTS OF GROUP OPINION OF SUBJECTS CLASSIFIED ACCORDING TO WHETHER THEY AGREED OR DISAGREED WITH EACH ITEM AND ACCORDING TO WHETHER THEY HAD INDICATED OR FAILED TO INDICATE THAT THEY FELT STRONGLY ABOUT IT. ONLY MEANS DERIVED FROM FIVE OR MORE OBSERVATIONS ARE INCLUDED

	Yes and Feel Strongly	*Yes*	*No*	*No and Feel Strongly*
		Part I		
1	79.4	66.1	46.0	
2	81.1	54.7	41.0	41.4
3	72.2	73.9	49.6	
4		33.1	18.0	5.8
5	80.9	81.4	46.6	
6	50.8	54.9	38.4	
7	76.6	73.8	48.0	
8		65.9	37.3	
9		40.8	17.7	
10	53.3	54.8	27.7	
11	76.9	69.0	47.8	
12		52.9	28.0	
13	55.2	58.7	31.0	
14			21.6	18.1
15	71.9	71.7	34.1	
16	83.4	61.3	36.1	
17			60.8	48.5
18	82.3	74.2		
19		27.1	12.4	12.5
20	74.3	65.8	50.0	
21	74.3	73.4	63.1	
22		47.8	29.0	21.5
23			25.9	
24		47.2	26.3	31.2
25	63.4	68.7	49.4	
		Part II		
1	66.6	64.8		
2	69.4	70.8	62.5	
3	63.1	59.9	43.8	
4	70.0	64.3	38.3	
5	51.4	41.8	38.1	36.4
6		48.3	29.6	31.2
7	67.5	62.3	52.1	37.5
8	63.6	68.9	45.3	

Table VI in the second column gives the mean of the judgments of those who answered "Yes" and felt strongly about the issue, and in the third column the mean of the judgments of those who answered "Yes" but who did not indicate that they felt strongly about it. The fourth and fifth columns give the mean judgments of those who said "No" but did not indicate that they felt strongly about the matter and the mean of those who said "No" and who felt strongly. In cases where the mean would have been based on less than six judgments, a blank is left in the table.

This table provides comparisons between cases where an individual just responded either "Yes" or "No" and cases where the subject also indicated strong feelings about the issue. In general, the differences are small. Of the 32 comparisons, there are twenty in which the group seems more biased in their judgments when they feel strongly about an issue than when they do not feel strongly. In the remaining twelve cases, the reverse occurs. It would be expected that if strength of feeling made no difference there would be on the average as many cases in which the mean of the group that felt strongly was more biased by its opinions as there would be cases in which it was less biased. Table VI shows a slight excess of cases in which the group that felt strongly was more biased. This excess is statistically insignificant and such an excess or greater would occur in approximately 20% of the cases by chance alone.

Differences for the most part are small and insignificant by any of the usual standards of statistical significance. It would seem from these results that the fact of taking a stand on some issue and giving a "Yes" or "No" answer is a more significant fact in determining an individual's judgment and outlook than feeling strongly or not feeling strongly about that particular issue. This would seem to agree to some extent with everyday experience which indicates that the individual tends to project his opinions on a group but does not tend so often to project the other qualities such as strength of feeling which accompany opinions.

THE RELATIVE ABILITIES OF MEN AND WOMEN AT JUDGING GROUP OPINION

There are some who seem to believe that a woman's opinion influences her judgment and powers of observation more than happens in the case of a man and that women are peculiarly bad judges of group opinion. The method of testing this hypothesis with the present data is first to find out whether the mean judgment of the women differed from the mean judgment of men on each item and if significant differences do occur then it would be necessary to determine from the examination of the data whether these differences added to or subtracted from the error of judgment.

Table VII shows the significance of the differences of the mean judgments of the 23 women in the group and the mean judgment of the men in the group with respect to group opinion.

TABLE VII

SIGNIFICANCE OF THE DIFFERENCE OF THE MEAN JUDGMENT OF THE MEN AND THE MEAN JUDGMENT OF THE WOMEN IN THE GROUP

Item No.	*Calculated Value of t** *78 degrees of freedom*
Part I	
1	1.7545
2	1.3634
3	0.0130
4	0.2535
5	0.9941
6	0.8504
7	1.8999
8	1.1511
9	0.6693
10	2.0950
11	1.5022
12	0.0659
13	1.2245
14	1.9626
15	0.4063
16	1.0436
17	2.3415
18	0.1832
19	1.7820
20	2.3877
21	1.0419
22	0.3950
23	0.4251
24	0.2742
25	0.5141
Part II	
1	0.8727
2	0.6609
3	1.0580
4	0.5655
5	0.4005
6	0.7652
7	1.5746
8	0.8341

* Calculated by the method described by R. A. Fisher in ''Statistical Methods for Research Workers,'' 6th edition, Oliver and Boyd, London, 1936, p. 128.

The table shows the calculated value of t for 78 degrees of freedom for the difference between the mean judgment of the women and the mean judgment of the men for each item. We would expect on the basis of chance alone that one or two of these differences would have a value of t above the 5% level of significance. In actual fact in this table there are 3 values which are greater than 2.0000.[1] It cannot be said that the differences indicated by the values of t differ significantly from the kind of differences which might be expected on the basis of chance. It can be said, then, in so far as mean judgments are concerned, that the mean judgment of the women is on the average about as good as the mean judgment of men. Fortunately for the purposes of the present analysis, the women on the average have approximately the same proportion of negative responses as the men for each item. Otherwise this would have complicated the analysis. A four-fold table giving the frequency with which men and women gave ''Yes'' or ''No'' responses for all of the first 25 propositions yielded on a test of homogeneity a value of 1.7203 for chi squared which is lower than the 10% level of significance. A similar chi squared for the 8 items in the second part was found to be 0.8128. This is also statistically quite insignificant. This indicates that the men and women were homogeneous with respect to proportion of ''Yes'' and ''No'' responses made on all items.

It might well be argued that the reason why significant differences have not been found between the men and women of the group with regard to their ability to judge group opinion is that the women are influenced more by their own opinions both in the case of affirmative and in the case of negative responses. In this event, it is possible that the two deviations would cancel each other out on the average and that as a result the mean judgment of the women would be the same as the mean judgment of the men although the women were more influenced by their own opinions in making these judgments and consequently made a greater error on the average. This cannot be so since in many of the items only 10% of the population gave an affirmative response while in other cases 90% gave an affirmative response. If women's judgments were influenced more by their own opinions, it would be expected that the mean of their judgments would be significantly different from those of the men in cases where there was a large majority either for or against the proposition. An examination of Table VII does not seem to indicate that when there is an overwhelming majority for or against any particular proposition that women's judgments in those cases differ significantly from those of men. It may be concluded then that in so far as our data indicates that men and women seem to be equally good or equally poor judges of public opinion. This conclusion will be substantiated through a different approach in the next chapter.

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[1] Similarly, it would be expected that on the basis of chance, 50% of the t's would be greater than 0.6745, actually 19 out of 32 exceed this value which is not greatly in excess of what might be expected on the basis of chance alone.

It has been suggested that men's judgments of the opinions of mixed groups of men and women are more closely correlated with opinions of the men of the group than with the opinions of the group as a whole. Similarly, there is the possibility that women tend to judge groups in terms of the women in the group. Unfortunately, the data which are presented here cannot be used to test this hypothesis. Since the opinions of the men as a group are, on the average, similar to the opinions of the women as a group, it is impossible to tell whether the men are judging the group in terms of the group as a whole or in terms of the men in the group, or whether the women in the group are judging the group in terms of the women in the group.

CHAPTER III

THE ABILITY TO JUDGE GROUP OPINION AND ITS RELATIONSHIP TO OTHER PERSONALITY TRAITS

At the time when the study with the previous group was nearing completion, an opportunity arose to collect similar data from another group under circumstances peculiarly propitious for the purposes of this particular research. In the first place, it was known that it would be possible to gain better cooperation from this group and consequently a higher percentage of completed questionnaires. It will be recalled that it had not been possible with the previous group to get more than a 50% return of questionnaires. Furthermore, this new group of 56 students had completed a variety of psychological tests in connection with the evaluation program of their year's work and it was known that the scores on these tests would be available for the present research. Consequently, there was an unusual amount of information available about the psychological makeup of the individuals of which this group was composed. It seemed worthwhile to examine the relationships between the errors made in judging group opinion and the personality traits of the judges.

This new group consisted of students just out of college who were preparing to be teachers. Therefore on the average these students were somewhat younger than those of the previous group. Their preparation for teaching consisted of a year's intensive study of general educational problems and of the special educational problems in their own fields of specialization. It follows from the way in which their whole year's study had been organized that each student had an unusual opportunity of gaining information about the other members of the group since the course offered more opportunity for intellectual and social contact with fellow members of the group than was the case with the previous study. Indeed, it may be said that outside of college groups, it rarely happens that 56 individuals ever have the opportunity of getting to know each other so well. This group will be referred to as the second group in order to distinguish it from the group previously studied which will be referred to as the first group. Owing to the fact that the members of the second group had already devoted a considerable amount of time to the completion of tests, the number of questions which the present investigator was able to ask them to answer was consequently somewhat limited. It was felt also that in a group that had devoted so much time already to completing tests and questionnaires the best cooperation would be obtained if the questions asked were limited to the absolute minimum necessary for the success of the present research. It was proposed therefore to select from the list of items used previously a limited number of the items and to ask each member of the group first to express his or her own agreement or disagreement with each of these and then to judge the opinion of the group with respect to each.

However, it is well to discuss first some of the other material and information which was available concerning individuals in this new group. Each member of the group had completed the Otis Intelligence Examination, the Higher Form, against a 20-minute time limit. As the reader will probably know, the Otis Intelligence Examination may be completed against a 20-minute limit or against a 30-minute time limit. In the present instance, the 20-minute time limit had been chosen because with intelligent groups, there is a tendency for too many students to hit the ceiling of the test if a longer time limit is given. Every student except one had also been given the Institute of Educational Research Reading Test, Form Gamma, and the same number of students had taken the Cooperative General Culture Test, Form Q. These three tests, the Otis Test, the Institute of Educational Research Reading Test, and the Cooperative General Culture Test are ordinarily very closely correlated. All three may be considered to be excellent measures of general ability.

Secondly, every student had completed the Bell Adjustment Inventory.[1] This inventory provides four separate measures of personal and social adjustment. According to the author of the test, the four scales measure:

a) Home adjustment—individuals scoring high tend to be unsatisfactorily adjusted to their home surroundings.

b) Health adjustment — high scores indicate unsatisfactory health adjustments.

c) Social adjustment—individuals scoring high tend to be submissive and retiring in their social contacts. Individuals with low scores are aggressive in social contacts.

d) Emotional adjustment—individuals with high scores tend to be unstable emotionally.

Separate items in the inventory are used for each of these scales. Each scale has 35 items. The total score on these four scales give a total adjustment score.

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[1] The Adjustment Inventory by Hugh M. Bell. Stanford University Press.

The reliabilities obtained by correlating odd with even items on each of the scales and applying the Spearman-Brown prophecy formula are as follows:

a) Home adjustment	0.89
b) Health adjustment	0.80
c) Social adjustment	0.89
d) Emotional adjustment	0.85

Thirdly, every student except one in the group had completed the Minnesota scale for the Survey of Opinions. This scale claims to measure "phases of personality and social attitudes that seem of fundamental significance for personal adjustment."

Six scales are provided as follows:

1) Morale—a measure of the degree to which the individual feels competent to cope with the future and achieve his desired goals. Scores reflect feelings of insecurity and discouragement.

2) Inferiority Feelings—a measure of the degree to which the individual feels at ease or possesses feelings of inferiority and inadequacy in his social contacts.

3) Family—a measure of family intimacy or discord, particularly in parent-child relationships.

4) Law—a measure of attitudes towards law and legal institutions.

5) Economic conservatism—a measure of attitudes concerning the prevailing economic system.

6) Education—a measure of the estimate an individual places upon the value of education as a social institution and as a means of personal advancement.

7) General adjustment—a measure of generalized adjustment or maladjustment. Persons who score unfavorably on this scale usually score unfavorably on four or more of the less general scales. This scale is composed of sixteen items from the other scales.

Items are arranged in omnibus form in groups of six so that every sixth item belongs to the same scale. All items are rated on a five point scale which varies from strongly disagree to strongly agree. Each item is scored from one to five points.

The authors state that the reliability coefficients for the scales usually range between 0.80 and 0.90 corrected by the Spearman-Brown formula.

Of course, it must be realized that these tests were not selected for the present purposes. They had been given to the group by Dr. Irving Lorge for the purpose of measuring the changes that might be expected to occur as a result of their year's work and consequently the measures they provide are not necessarily those which would be of greatest interest for the present investigation. The present writer is indebted to Dr. Lorge for making the data available. It is probable however that the present writer would have given an Otis test if the opportunity had arisen, and also the Bell Adjustment Inventory or the equivalent. The results from the Minnesota Scale on the other hand would be more likely to be of interest to those concerned with pedagogy rather than to those interested in the present kind of research. For example, scales 4 and 6 of the Minnesota have no obvious relevance to a study of the factors determining the ability to judge group opinion.

It was proposed to investigate through the use of these data the relationship between the ability to judge group opinion and other personality traits.

Now, let us return to the matter of the selection of the items through which it was proposed to measure with this group of students their ability to judge public opinion and to establish or deny the existence of any such general ability. It was feared that if the items about which judgments were to be made were limited to the kind of items which had been chosen in the previous experiment the results would demonstrate the existence of a general factor amongst the errors on the individual items due to a halo effect. For example, if an individual judged the group to be generally rather liberal, this kind of a judgment might affect the individual judgments on most items. If this general judgment of the liberalism of the group happened to be a good one, the specific judgments would tend to be rather better than if this general judgment were poor. Consequently a general ability to judge group opinion might seem to exist through the halo of the general judgment. This sort of phenomena is common in judgments of personality as was mentioned in the introduction.

As was mentioned in the first chapter, judgments of personality on individual personality traits are invariably influenced by some general judgment of like or dislike for the individual being judged. Consequently, it was felt that the kind of propositions about which the subjects in the present study were asked to make judgments should not be limited to those issues which might have this common halo of liberalism. Fourteen items were selected from the list given in the previous chapter and ten new ones were added which it was believed would show no common halo effect with the first fourteen.

These two groups together formed a list of twenty-four propositions. Each proposition was followed by the question "What percentage of the class do you think would answer this question in the way you have answered it?" Several subjects had suggested in the previous investigation that this might be a much simpler and better way of getting the individual's judgment of group opinion, since it seems that some people, when asked "What percentage of a group agrees with this proposition?" first tend to think of the number that would agree with their own opinion and then change it so that it becomes the percentage that would agree with the proposition.

The instructions given were as follows:

JUDGING PUBLIC OPINION

This is an investigation of the ability of people to judge public opinion. In each of the following items you are asked to judge the percentage of the class that think the same way as you do about a certain issue. But in order to find out how good a judge you are, we will have to know the opinion of the group. Hence it is necessary for us to know the opinion of each member of the class, and we are asking each of you to give your own opinion about each of these issues.

We are also interested in finding out how the ability to judge public opinion is related to the scores you have made on various tests. In order to do this, we will need to know your name. You can be sure that nobody, except the present research worker, will ever see the opinions you express. The first page, giving your name, will be destroyed as soon as possible.

Your cooperation in this investigation will take about 15 minutes. Please answer every question. The success of the investigation depends on this. In some cases you may not feel that a "Yes" or a "No" answer expresses exactly your opinion, but nevertheless choose the one of these two that seems best.

In the second part of each question, you may sometimes feel that you can only make a guess. In such cases, make the best guess you can. Your guesses will be valuable.

Name ——————————————————————————
First Middle Last

Following these instructions was the list of items given here. In each case the second part of the question has been omitted. This part asked "What percentage of the class do you think would answer this question in the way you have answered it?"

The items were as follows:

1) Are you in favor of the abolition of capital punishment? Yes............ No............
2) Are you in favor of outlawing the Communist party? Yes . . . . No ....
3) Are you in favor of socialized medicine? Yes............ No............
4) Are you in favor of Prohibition? Yes............ No............

5) Are you in favor of Government ownership of railways? Yes .... No ....

6) Are you in favor of compulsory unemployment insurance for all? Yes .... No ....

7) Are you in favor of raising the age at which an individual may vote to 25? Yes .... No ....

8) Are you in favor of married women working outside the home? Yes .... No ....

9) Are you in favor of Government ownership of the telephone service? Yes .... No ....

10) Are you in favor of fingerprinting all citizens? Yes .... No ....

11) Are you in favor of the sterilization of habitual criminals? Yes .... No ....

12) Are you in favor of legalizing birth control clinics? Yes .... No ....

13) Are you in favor of equal wages for men and women in the same jobs? Yes .... No ....

14) Are you in favor of abolishing privately owned schools? Yes .... No ....

15) Do you follow the baseball scores closely during the season? Yes .... No ....

16) Do you prefer classical music to modern music? Yes .... No ....

17) Are you in favor of abolishing all grades, credits, or marks in the school system? Yes .... No ....

18) Have you been absent from work through sickness for more than 7 consecutive days during the last year? Yes .... No ....

19) Do you prefer participating in outdoor sports such as tennis to indoor recreation such as reading? Yes .... No ....

20) Are you in favor of replacing the traditional subject matter curriculum by a "functional curriculum"? Yes .... No ....

21) Would you prefer to live in New York City than in a small town of less than 10,000 inhabitants? Yes .... No ....

22) Have you ever been to Europe? Yes .... No ....

23) Are you descended from an essentially Protestant family? Yes .... No ....

24) Do you think freight trucks should be kept off highways during certain hours on Sundays and holidays? Yes .... No ....

Questionnaires asking for the information outlined above were given out to the group after a few introductory remarks had been made by a staff member at the general seminar meeting on a Monday. The students were asked to return them as soon as possible. Within a week, 51 of the questionnaires had been returned, all of which with one exception had been properly filled out. The student who handed in the exceptional questionnaire had added so many qualifications to her responses as to make the questionnaire relatively useless for the present purposes. Nobody, it seemed, objected in any way to giving his name and the students seemed to have good faith in the promise that the page containing their name would be destroyed as soon as possible. No doubt the shortness of the questionnaire partly accounted for the high returns, and the promise that every student who returned the questionnaire would be given an account of his or her results probably provided some incentive for action. Two further questionnaires were returned some weeks later, too late unfortunately to include them in the general computation of the results. Since three students were away on the day in which the questionnaire was given out, it follows that all except one of the students present completed the task.[2]

Since the members of this group were more familiar with each other's opinions than were those of the previous group, it would have been expected that less wild guessing would have taken place in judging the opinion of the group; but in this group as in the previous case, the judgments are scattered over almost the entire scale of from 0 to 100% on almost every item. It may be said, however, that on those items where it is possible to compare the scatter of the judgments of the first group with the scatter of the judgments of the second group, there is a very slight tendency for the judgments of the second group to be less scattered.

Table VIII shows the standard deviation of the judgments for each item on the questionnaire given for the second group, and the standard deviation of the judgments of the first group on comparable items.

It will be noted from this table that the scatter of the judgments in the case of the first group is slightly greater on the average than the scatter of the judgments of the second group. It will be noted also that the scatter of the judgments on all items is very great indeed. This is somewhat surprising in view of the fact that the members of this group know more about each other than do the members of most groups. They certainly know more about each other than most teachers do about their students or most administrators do about the public they serve. It must also be borne in

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[2] I am particularly indebted to Professor Watson and Professor Tewksbury, who, as professors in charge of the group, permitted this investigation and whose cooperation resulted in such a successful collection of data.

TABLE VIII

STANDARD DEVIATION OF THE JUDGMENTS OF GROUP OPINION ON EACH ITEM FOR THE SECOND GROUP AND THE STANDARD DEVIATION FOR THE FIRST GROUP IN THOSE CASES WHERE SIMILAR ITEMS WERE GIVEN

Item Number	*Standard Deviation of Judgments of First Group on Similar Items*	*Standard Deviation of Judgments of Second Group*
1	24.96	26.48
2	29.25	21.14
3	21.80	16.24
4	23.40	15.49
5	23.41	19.21
6	21.34	21.36
7	21.60	15.58
8	22.11	21.23
9	25.38	21.86
10	29.28	28.26
11	27.37	27.55
12	23.43	16.89
13	18.71	15.81
14	27.46	26.11
15	....	21.95
16	....	20.42
17	....	22.85
18	....	12.06
19	....	20.43
20	....	18.66
21	....	19.74
22	....	16.68
23	....	17.39
24	....	25.45

mind that for the main part the items deal with the kind of things which have been discussed by the members of the group amongst themselves and therefore a great many items deal with the kind of things where judgments of group opinion would be most easily made.

It would seem then that the task of judging group opinion is indeed a difficult one and probably far more difficult than is usually assumed, even under circumstances which favor the making of accurate judgments.

In other matters, too, the results of this group corroborate the findings and conclusions of the previous chapter. For example, there is a very strong tendency for the individual's own opinion to influence his judgment of group opinion. Table IX demonstrates clearly this tendency towards a positive halo. This table shows the mean judgment of those answering "Yes," the mean judgment of those answering "No" on each item, and the biserial correlation between the individual's own opinion and his judgment of group opinion.

TABLE IX

Table Showing the Correlation between an Individual's Opinion and His Judgment of Group Opinion

Item Number	*Percentage of Group Responding Yes*	*Mean Judgment of Those Responding*		*Correlation between Judgment of Group Opinion and the Opinions of the Individuals*	*Correlations from Previous Experiment between Judgment of Group Opinion and the Opinions of the Individuals*
		Yes	*No*		
1	60	66.966	38.350	0.663	0.557
2	18	27.444	22.098	0.142	0.470
3	80	72.275	57.500	0.520	0.589
4	2	20.000	11.592	0.220	0.378
5	82	59.683	51.667	0.235	0.423
6	92	75.609	48.750	0.623	0.674
7	4	10.000	12.083	–0.058	0.633
8	76	74.263	46.667	0.762	0.623
9	72	57.806	46.429	0.313	0.575
10	66	70.182	34.706	0.769	0.717
11	44	72.045	35.393	0.831	0.698
12	96	81.500	65.000	0.435	0.372
13	92	81.239	65.000	0.508	0.289
14	14	63.571	26.721	0.763	0.623
15	38	36.947	51.613	–0.413	....
16	72	51.361	40.000	0.333	....
17	34	59.059	37.000	0.591	....
18	10	20.000	21.000	–0.043	....
19	64	58.000	52.056	0.181	....
20	92	86.556	57.000	0.980	....
21	54	55.740	49.696	0.192	....
22	20	18.000	18.950	–0.033	....
23	46	44.783	35.704	0.327	....
24	56	74.929	45.000	0.735	....

For the sake of comparison, the biserials for this relationship as found with the previous group wherever the content of the items was comparable are also given in this table. There does not seem to be any marked relationship between the biserials found with the one group and the biserials found with the other group except in the matter of the order of their general magnitude. With both groups they tend to be large and positive.

It will be noticed that with the present group, there are 20 positive biserial correlations, 3 negative biserial correlations which differ insignificantly from zero, and one significantly large negative correlation. This latter correlation which refers to the item which asks "Do you follow the baseball scores closely during the season?" does not suggest any obvious or tenable explanation. The other three negative items are:

> "Are you in favor of raising the age at which an individual may vote to 25?"
> "Have you been absent from work through sickness for more than 7 consecutive days during the last year?"
> "Have you ever been to Europe?"

At least two of these items deal with matters of fact rather than with matters of opinion, and this may account for some of their peculiarities with respect to this matter of the halo of the judges' own makeup. It is of interest to note that item 23 which deals with the matter of judging the group's religious background shows the same halo effect as is found with most items. This suggests a tendency for people to overestimate the magnitude and strength of the groups to which they belong.

The items with the three highest biserial correlations do not seem to include any special common features. They are as follows:

> "Are you in favor of replacing the traditional subject matter curriculum by a functional curriculum?"
> "Are you in favor of sterilizing the habitual criminal?"
> "Are you in favor of fingerprinting all citizens?"

In the last chapter, it was suggested that the halo phenomenon may be due to the fact that people tend to associate with others of like opinions, and that consequently the individual's picture of the larger group is necessarily a biased one. However, the correlation between the individual's own opinion and his judgment of group opinion seems so general and to cover such a wide variety of items that such an explanation does not seem to be entirely satisfactory. It seems probable then that opinions have some far more direct effect on judgments of group opinion such as would occur if the individual tended to identify himself with the group and his opinion with the group opinion.

Table X shows the percentage of the group answering in the affirmative to each statement and the mean of all their judgments of group opinion on each statement. It will be noted that there is a tendency for the means of the judgments to be crammed unduly towards the center. Individuals in this group as in the previous group seemed to avoid making judgments of above 90% and below 10%. The standard deviation of the column marked "the % answering Yes" is 30.2 and that of the right hand column 21.4. The correlation between the mean of the judgments and the actual percentage agreeing is 0.95.

This persistent tendency for judgments to tend towards the 50% mark is not easy to explain. Two suggestions present themselves.

One of these accounts for this phenomenon in terms of the special nature of the groups that acted as subjects. The other considers it to be a special case of a more general phenomenon. The first of these explanations is that teachers as a group, and those training to be teachers, are a middle group of people not only in income, in social class, but in their attitudes and opinions. They are a group of people that shun the extremes. As a group, they are neither great scholars nor completely ignorant, neither extreme radicals nor diehard conservatives, neither poverty stricken nor wealthy. They represent the middle people, middle in all things, and to some extent *they are* the middle people. It is not surprising then that they should tend to judge themselves as a middling group, including people who would support both sides of almost any argument, and not as a group supporting only one side.

The other possible explanation is that this group may tend to overestimate the size of minorities. It is commonly observed in politics and in public matters that officials over-emphasize the size of minorities, particularly subversive minorities, and the present study may offer an example of this phenomenon.

TABLE X

TABLE SHOWING THE PERCENTAGE OF THE GROUP ANSWERING "YES" TO EACH STATEMENT AND THE MEAN OF ALL JUDGMENTS FOR EACH ITEM

Item Number	*Percent Answering "Yes"*	*Mean Judgment*
1	60	56
2	18	23
3	80	69
4	2	12
5	82	58
6	92	73
7	4	12
8	76	68
9	72	55
10	66	58
11	44	52
12	96	81
13	92	80
14	14	32
15	38	46
16	72	48
17	34	45
18	10	21
19	64	56
20	92	84
21	54	53
22	20	19
23	46	40
24	56	62

At the present time, either of these explanations seems tenable and it will require a further investigation before it can be decided which is the more probably true.

THE GENERAL ABILITY TO JUDGE GROUP OPINION

In order to determine how an individual's psychological makeup affects his ability to judge group opinion, it is necessary to show in the first place that there is an ability of this kind. That is to say, it is necessary to answer the question ''Do people who make large errors regarding their judgments of group opinion on one issue also make large errors in judging groups with respect to other matters?'' In order to find an answer to this question, a table was drawn up showing the error of judgment of each individual on each of the 24 items in the questionnaire. A general examination of this table indicated that the correlations between the errors made on individual items were extremely small and rarely above 0.2. Consequently, it seemed that the best way of answering the question under consideration was to sum the errors on a number of items and to compare this sum with the sum derived from other items. In the absence of any general ability to judge group opinion, this correlation would be zero. An examination of the table of errors suggested that errors on different items should be summed regardless of sign. The sign of an error is determined very largely by the nature of the item. For example, on an item where the group was 95% in favor of the proposition, practically all errors of judgment would be negative. When only one or two percent of the group were in favor of any proposition, all errors of judgment would, of course, be positive. Consequently, the sign of an error of judgment of group opinion is determined very largely by the nature of the proposition and the nature of the group's reaction.

The total errors for the 24 items made for each individual were summed regardless of sign and this provided a total error score. On this total score, the person who hit the median made on the average an error of 17⅔% per item, giving a total error score of 424. On the same basis, the lowest and highest total error scores were 260 and 755, which corresponds to an average error score per item of 10.8% and 31.4%.

The degree to which errors on different items are correlated and the value of the sum of all errors as a measure of the ability to judge group opinion will be discussed a little later. It is possible, however, to improve this measure to some extent.

TABLE XI

CORRELATION BETWEEN THE ERRORS MADE IN JUDGING GROUP OPINION ON EACH ITEM WITH THE SUM OF THE ERRORS ON ALL ITEMS

Item Number	*Correlation*
1	0.299
2	0.305
3	0.326
4	0.323
5	0.452
6	0.609
7	0.269
8	0.091
9	0.538
10	0.309
11	0.258
12	0.332
13	0.198
14	0.249
15	0.080
16	0.431
17	0.365
18	−0.051
19	−0.008
20	0.297
21	0.309
22	0.340
23	−0.012
24	0.119

The sum of all the errors on the 24 items for each individual provides a measure of whatever is common to the errors on the 24 items. The errors on some of these items are better measures of whatever these errors have in common than are the errors on other items. The degree to which the errors on any item can be considered to be a good measure of whatever all the errors have in common is indicated by the correlation between the errors made on that item and the sum of the errors on all items. Table XI gives the correlation between the errors made on each item with the total error score.

It will be seen that these correlations vary considerably. They represent an approximation to the correlation between the errors made on individual items with the first factor which could be derived from an analysis of the intercorrelations of the errors made on all items.

The six items which show the lowest correlations with this first factor are:

Item 8: "Are you in favor of married women working outside the home?"
Item 15: "Do you follow the baseball scores closely during the season?"
Item 18: "Have you been absent from work through sickness for more than seven consecutive days during the last year?"

Item 19: "Do you prefer participating in outdoor sports such as tennis to indoor recreations such as reading?"
Item 23: "Are you descended from an essentially Protestant family?"
Item 24: "Do you think freight trucks should be kept off highways during certain hours on Sundays and holidays?"

It will be noted that this list includes three out of the four items which deal with matters of what people do or what people are as distinguished from those items which deal with people's opinions. It is probable that this is due to the fact that the people in this group have more evidence and more knowledge about the opinions of the members of the group than they have about matters related to their background and the things they have done.

For the main part, these six items deal with matters about which the people in this group can only make poor guesses and where the basis for judgment is vague and indefinite. It was decided to exclude these six items from any total error score used in further work.

An alternative method of expressing a total score for each case is to calculate for each individual the correlation between his judgments and the opinion of the group. Such a correlation was calculated for each individual, and these correlations were found to vary from 0.16 to 0.89 with a mean value of 0.69. All of them were positive. The correlation between these correlation scores and the total error scores was found to be – 0.96, which suggests that they could be used interchangeably for most purposes. It also suggests that individuals do not tend to bias their scores by some consistent amount.

It will be remembered that items 15 to 24 inclusive were included because it was feared that judgments made with respect to the first fifteen items would be made on the basis of some general judgment of liberalism or conservatism of the group and consequently, since this general judgment would affect all judgments, the communality amongst the judgments on these items would be high. A total error score from these items would represent the individual's ability to make this general judgment of the liberalism of the group and might not represent his ability to judge the opinions of this group in general.

It has been noted already (p. 45) that intercorrelations of individual items are extremely small and this suggests that the halo of any general judgment was either small or absent. It is possible, however, to check up on whether the errors made in judging the opinion of the group with respect to the first group of items would indicate the magnitude of the errors made in judging the second group of items. Excluding the six poor items, three compound scores were made up. The first of these consisted of items 1 to 5. The second consisted of items 6, 7, 9, 10, and 11. The third consisted of items 16, 17, 20, 21, and 22. These last five items will be relatively unaffected by the halo of some general judgment with respect to liberalism of the group.

These scores may be called Y1, Y2, and Y3. If the errors made in judging the group with respect to the first group of items measure only the ability to make a single general judgment, it would be expected that the correlations between Y1 and Y2 would be greater than those between Y2 and Y3. However, it was found that the correlation between Y1 and Y2 was 0.3475 while the correlation between Y2 and Y3 was 0.4738, and that between Y1 and Y3 was 0.3644. These results seem to indicate that the errors made in judging group opinion in one general area are a fair criterion of the errors that will be made in judging in other areas.

A total score was made up for each individual from the sum of the errors on the eighteen items which correlated highest with the sum of the errors on all items. On this scale total scores ranged from 182 to 702, which correspond to average errors per item of 10.1% to 39.0%. The average amount of error for the best individual is surprisingly low while the average error for the worst judge is surprisingly high. An average error of 10% means that the judge must guess the number of persons agreeing with each proposition without misjudging more than five individuals on the average. Such a performance seems to be one of almost unbelievable skill. On the other hand, a mean error of 39% per item is large. This error means that on most items, the opinion of the group is judged to be on the wrong side of the 50% mark. It means that in general such a judge would consider a majority opinion to be a minority opinion and a minority opinion to be a majority opinion. Such an individual would probably make many unfortunate decisions as an administrator. Indeed, one could well imagine what would happen if an administrator made all his decisions to accord with the minority opinion of the group he was serving, thinking all the while that his policy was that of the majority. Unfortunately, such individuals are common and are in blissful ignorance of their incapacity to judge group opinion. If people, and especially administrators would realize that the task of judging public opinion is no easy one, and liable to large errors even under the best conditions, they might exercise greater caution in pronouncing what is and what is not the state of the public mind.

The distribution of this total error score is shown in Figure 8. From here on this score will be referred to as the measure of the ability to judge group opinion. In order to make it more meaningful to the reader, the measure has been divided by 18 to convert it into an average error per judgment.

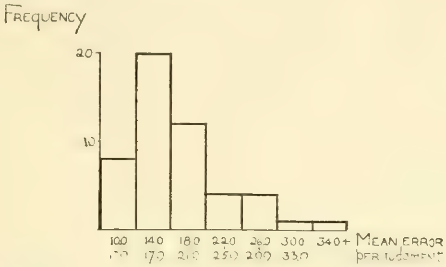

Fig. 8. Distribution of the average error for each of the individuals in the group in judging group opinion.

The reliability of the total measure is estimated to be 0.64. This estimate was found by correlating items 1, 2, 3, 4, 5, 6, 7, 9, and 10, with the remaining nine items of which the total score was composed. The Spearman-Brown formula was then applied in order to estimate the reliability for the full eighteen items. Considering the small number of items in the total measure of the ability to judge public opinion, the reliability of the measure is surprisingly good. If it were desired to make a test of the ability to judge group opinion, a test of fifty items should provide a reliable and adequate measure.

The validity of this measure of the ability to judge group opinion can be easily defended. It is a direct measure and unlike most psychological measures, its validity is not so dependent on the validity of a subjective analysis of behavior and the psychologist's ability to develop analogous tasks. However, although it may be a good measure of the individual's ability to judge the group under consideration, it does not follow that it is necessarily a good measure of the individual's ability to judge the opinions of groups with whom the individual is not in daily contact. This point will be discussed at greater length towards the end of this chapter.

The validity of this measure may, however, be questioned on other grounds. It may be said that the criterion used to measure group opinion is not altogether a valid one and that people may respond in the affirmative to a proposition while their true opinion is in the negative, owing to the fact that they have been forced to come to some sudden decision in a matter about which they had hitherto given but little thought. The answer to this is that in real life the important thing is to be able to estimate how people will vote at any given time, and since group opinion will change and can be made to change, the way in which people will vote at some future date is quite another issue.

Although on individual items there did not seem to be any evidence that men or women were superior as judges of group opinion, there still remained the possibility that the small and insignificant superiorities and inferiorities might, when added together, result in a significant superiority for either one sex or for the other. The group under consideration included 23 men and 27 women. The average error per judgment for the men was 18.0% and for the women 18.4%. The difference between these average errors is socially quite insignificant since the misjudgment of the opinion of a single individual in a group would result in an error of 2%, and consequently a difference of 0.4% means little. While this difference is insignificant for all practical purposes, it is also statistically quite insignificant. Its statistical insignificance is shown by the fact that the calculated value of t for this difference is 0.7621 which means that such a difference or a larger difference would occur in 40% to 50% of the cases when chance factors alone were operating to produce the difference. It is possible, of course, that in matters where the opinions of men and women are divided that men and women may show significant differences in their ability to judge group opinion according to the sex predominating in the group being judged.

THE RELATIONSHIP BETWEEN THE MEASURE OF THE ABILITY TO JUDGE GROUP OPINION AND OTHER MEASURES

A general inspection of the scores by one who had worked with the group did not suggest any obvious relationships between these scores and the mental makeup of the individuals. There did seem some possibility, however, that those who had taken part in the class activities of the group might be better judges of group opinion than those who had just sat through the sessions as passive listeners. Two of the staff who had worked with the group for the year were asked to go over a list of the students and to mark with a plus (+) those who had been active participants in group discussion, with a minus (–) those who had hardly ever participated in group discussion, and to leave a blank against those who had participated occasionally. In groups of this kind, it usually happens that class discussions depend almost entirely on a small minority that does most of the talking. Consequently, it is a fairly easy matter for anyone knowing the group to pick out the big talkers. In no case did one of these raters rate with a + a student who had been rated as – by his colleague. The consistency of the ratings in this matter was good, as it was expected to be.

A comparison was made between those whom both judges agreed were regular participants in class discussion and those who hardly ever participated in such group activity, with respect to their ability to judge public opinion as measured in the way which has been described. The average error per judgment for the nine members of the group that participated in group discussion was 18.4%. The average error per judgment for the nineteen members of the group that participated but little was 20.3%. The difference between the means is therefore 1.9. There is a 60% chance of getting such a difference, or a greater difference through the operation of chance or irrelevant factors (the value of t was calculated to be 0.4580 for the 26 degrees of freedom). Consequently, group participation of this kind seems to be of little importance in determining an individual's ability to judge group opinion.

Since a general examination of the scores by those who knew the subjects did not suggest any obvious relationship between personality traits or abilities and the ability to judge group opinion, the relationship between the measure of this ability and the other psychological measures available were computed. These relationships are given in the form of correlation coefficients in Table XII. The signs have been inverted where necessary to make them what they would be if all high scores were good scores. This criterion cannot be strictly applied to scales 4, 5, and 6 of the Minnesota Scale, and consequently the signs of these correlations are untouched. On these scales, high scores indicate a liberal viewpoint.

While the present study was made at the end of the spring semester, the group had taken the tests at the beginning of the previous winter semester and consequently the scores do not reflect the influence which the two semesters' work may have had.

First it should be noted that the correlations between the measure of the ability to judge public opinion and the measures of other abilities are small and on the whole negligible in size. On the other hand, the correlations with the measures of various aspects of per-

TABLE XII

CORRELATIONS BETWEEN THE ABILITY TO JUDGE GROUP OPINION AND OTHER MEASUREMENTS

Tests of Ability	
I.E.R. Reading Test	−0.131
Otis, 20 mins.	0.044
General Culture (Cooperative Form Q)	−0.091
Bell Adjustment Inventory	
Home Adjustment	0.105
Health Adjustment	0.177
Social Adjustment	0.379
Emotional Adjustment	0.204
Total Adjustment Score	0.265
Minnesota Scale of Opinions	
1) Morale	0.268
2) Inferiority Feeling	0.195
3) Family	0.018
4) Law	0.199
5) Economic Conservatism	0.290
6) Education	−0.041
7) General Adjustment	0.242

(The signs of the correlations have been inverted where necessary to make them as they would be if high scores on all measurements were good scores, wherever a criterion of goodness is ordinarily applied.)

There are 5 chances in 100 that a correlation of 0.2749 or greater would occur by chance, and 1 chance in 100 that a correlation of 0.3517 or greater would occur by chance.

sonality adjustment are much larger and positive. It is unusual for an ability to correlate negligibly with other abilities for, as E. L. Thorndike has pointed out, if psychologists have discovered any general law in their field of study, it is that all positive abilities tend to go together. This ability seems far less closely related to other abilities than it is to those characteristics of personality which determine an individual's relationship to those around him.

The small size of these correlations with the measures of general ability is not due to a lack of variation in the general ability of the members of group. This is obvious from an examination of their scores. The Otis scores varied from 36 to 72 with a mean at 49 and a standard deviation of 8.9. This represents a very considerable range of mental ability and as much as one might expect in most student groups.

The Total Adjustment Score from the Bell Inventory and the General Adjustment Score of the Minnesota Scale are both related to the measure of the ability to judge group opinion and in about equal amounts, the correlations being 0.265 and 0.242 respectively.

Of the four scales provided by the Bell Adjustment Inventory, that which correlates most highly with the measures of the ability to judge public opinion is the social adjustment scale, while the emotional adjustment scale comes second. As might have been expected, home adjustment and health adjustment seem less closely related to this ability than do the other adjustment scales.

The application of the multiple correlation technique suggests that the various adjustment measures correlate with the measure of the ability to judge group opinion in so far as they are correlated with the social adjustment score. The following measures were included in a multiple correlation:

1) Social Adjustment —Bell Adjustment Inventory
2) Morale —Minnesota Scale of Opinions
3) Emotional Adjustment—Bell Adjustment Inventory
4) Inferiority Feeling —Minnesota Scale of Opinions
5) Health Adjustment —Bell Adjustment Inventory
6) Home Adjustment —Bell Adjustment Inventory

Using the numbers in the above list to indicate the test scores, the following gives the multiple correlations derived from various combinations of these test scores:

Measures in Multiple Correlation	*Multiple Correlation*
1 2 3 4 5 6	0.4428
1 2 3 4 5	0.4422
1 2 3 4	0.4359
1 2 3	0.4194
1 2	0.4194
1	0.3792

The indications from this are that the only measure which may contribute anything over and above the contribution made by the measure of social adjustment is the measure of "morale" although the additional contribution is small. Social adjustment, as measured by the Bell Inventory, seems to be the main identifiable factor which accounts for the variance of the measure of the ability to judge group opinion.[3]

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[3] It has been assumed in this discussion that both the measure of the ability to judge group opinion and the scores from the various tests have perfect reliabilities. It is possible to estimate what these correlations might be without this attenuating effect by applying the customary correction. On this basis, the correlation with the social adjustment scale is raised to 0.502, using the published reliability for this scale which would be higher than its reliability with the present group, but the correlations with the measures of general ability still remain insignificant.

It would seem then at first sight that the ability to judge group opinion can operate effectively only when the emotional adjustment between an individual and those around him is of a kind which psychologists would call satisfactory.

Much has been said and written in recent times of the influence of emotional maladjustment on measures of intelligence. Evidence to support the view that measured intelligence may increase if the adjustment of the individual is improved is still inadequate to support this as a general thesis and the position accepted by most psychologists is that any improvement in emotional adjustment will not raise the I.Q. appreciably except in extreme cases. In the present study, however, there seems good reason to suppose that the ability under investigation could be seriously inhibited by poor social and emotional adjustment. It is well known and has frequently been stressed by clinicians that the neurotic as well as the psychotic has usually a distorted picture of his social environment. The present study indicates that the amount by which an individual's picture of his social environment is distorted depends to some extent on his general adjustment. It must be borne in mind, however, that there is always the possibility that poor social adjustment may be due to some extent to an inability to judge group opinion.

The correlation of 0.290 between the ability to judge group opinion and the scale of conservative-liberal economic attitudes turns out to be a matter of interest on further analysis. It will be recalled that three subscores were used previously called Y1, Y2, and Y3, each of which was the total error on five items of the questionnaire. The first two of these scores, Y1, Y2, were derived from the items which would be likely to distinguish liberals from conservatives, while the remaining variable was derived from different kinds of items. The correlation between these variables and the conservative-liberal scale of economic attitudes were found to be 0.328 for Y1, 0.203 for Y2, and 0.067 for Y3. They suggest that the correlation between the total measure of the ability to judge group opinion and the attitude scale is due largely to the items that distinguish liberals from conservatives. It follows that the more liberal a person is according to the scale, the worse he is likely to be as a judge of group opinion in the matters on which liberals and conservatives are divided.

The facts do not suggest that the scale of conservative-liberal economic attitudes is correlated with the measure of the ability to judge group opinion only because it has something in common with the measure of social adjustment. The measure of social adjustment correlates only 0.1574 with the measure of conservative-liberal economic attitudes which is smaller than the correlations of either of these variables with the measure of the ability to judge group opinion. The multiple correlation of these two variables with the measure of the ability to judge group opinion is 0.4452. This supplies some further justification for the conclusion drawn in the previous paragraph that the degree to which a person is liberal in outlook influences in and of itself those judgments of group opinion which are concerned with liberal views.

The scale of attitudes towards the law is correlated with the conservative-liberal scale to the extent of 0.3588. An examination of the items in the law scale would lead one to expect such a correlation since many of the items are liberal issues. Consequently, it might be expected that the law scale is correlated with the measure of the ability to judge group opinion because it is a measure of conservative-liberal attitudes. This conclusion is borne out by the fact that the correlation of 0.2899 between the conservative-liberal scale and the measure of the ability to judge group opinion is raised only to 0.3072 by the inclusion of law attitude scores in a multiple correlation. Consequently it seems reasonable to conclude that the law attitudes correlate with the ability to judge group opinion only in so far as it correlates with scale of conservative-liberal attitudes.

THE JUDGMENTS OF MEMBERS OF MINORITY GROUPS

It frequently occurs that minorities like majorities misjudge their strength. The pages of history are filled with the tragic stories of minorities that overestimated their strength of numbers in initiating rebellion. It is probable that this error was due in part to the tendency for individuals to overestimate the number of people who think as they do. This in turn may be partly due to the fact that people tend to associate with those of like opinion and may consequently have had little direct contact with the opposition. Similar errors are also made by majorities and for similar reasons. There is, however, the interesting problem of whether minorities, on the average, misjudge their size more frequently or to a greater extent than majorities misjudge theirs.

Table XIII is derived from the data provided by the first group studied. It gives in the second column the difference between the mean of the judgments of those answering "Yes" to each proposition and the actual value for the opinion of the group being judged.

The third column gives the difference between the mean of the judgments of those answering in the negative and the opinion of the group. Sometimes the ''Yes'' group is in a minority and sometimes the ''No'' group. The mean of the judgments of group opinion of the minority group has been set in bold face type. It will be noted in reading this table that in every case except one the minority shows a greater average error than the majority. This occurs both when the minority is the group responding in the affirmative and when the minority is the one responding in the negative. At first, this phenomenon seemed puzzling and no straightforward explanation offered itself.

TABLE XIII

ERRORS OF THE MEANS OF THE JUDGMENTS OF GROUP OPINION. THE MEANS FOR THOSE RESPONDING ''YES'' ARE SEPARATE FROM THE MEANS OF THOSE RESPONDING ''NO.'' THE GROUP REPRESENTING THE MINORITY IS IN BOLD FACE TYPE. THE DATA ARE DERIVED FROM GROUP I AND THE ITEM NUMBERS REFER TO THE QUESTIONNAIRE GIVEN TO THAT GROUP

Item Number	*Group Answering ''Yes''*	*Group Answering ''No''*
1	+ 7.1	− **15.2**
2	+ **18.9**	− 0.5
3	− 9.9	− **33.2**
4	+ **12.9**	− 3.1
5	+ 5.2	− **29.4**
6	− 3.7	− **19.5**
7	− 10.5	− **37.5**
8	+ 10.0	− **20.5**
9	+ **30.7**	+ 4.1
10	− 14.4	− **41.3**
11	+ 0.8	− **22.5**
12	+ 0.5	− **22.8**
13	− 7.0	− **33.7**
14	+ **31.2**	+ 18.5
15	− 7.3	− **39.0**
16	− 1.1	− **32.5**
17	+ **40.1**	+ 19.8
18	− 16.2	− **37.5**
19	− **7.9**	− 16.6
20	− 16.1	− **32.5**
21	− 16.3	− **26.9**
22	+ **29.4**	+ 6.8
23	+ **55.5**	+ 18.3
24	+ **27.6**	+ 6.5
25	− 22.0	− **39.8**

This tendency for the minority groups to be the worst judges also occurred in the second group studied. The data derived from the second group are given in Table XIV. In this case, the members of the minority group made a larger error in their judgments of group opinion in 19 cases out of 24.

TABLE XIV

Errors of the Means of the Judgments of Group Opinion. The Means of Those Responding "Yes" Are Separate from the Means of Those Responding "No." The Group Representing the Minority is in Bold Face Type. The Data Are Derived from the Second Group Studied and the Item Numbers Refer to the Questionnaire Given to That Group

Item Number	*Group Answering "Yes"*	*Group Answering "No"*
1	6.966	**–21.650**
2	**9.444**	4.098
3	– 7.725	**–22.500**
4	**18.000**	9.592
5	–22.317	**–30.333**
6	–16.391	**–43.250**
7	**6.000**	8.083
8	– 1.737	**–29.333**
9	–14.194	**–25.571**
10	4.182	**–31.294**
11	**28.045**	– 8.607
12	–14.500	**–31.000**
13	–10.761	**–27.000**
14	**49.571**	12.721
15	**– 1.053**	13.613
16	–20.639	**–32.000**
17	**25.059**	3.000
18	**10.000**	11.000
19	– 6.000	**–11.944**
20	– 5.444	**–35.000**
21	1.740	**– 4.304**
22	**– 2.000**	– 1.050
23	**– 1.217**	–10.296
24	18.929	**–11.000**

This behavior tendency of members of minority groups seems to be a direct consequence of two phenomena which have already been discussed. One of these is the tendency for judgments to be biased towards the 50% value, and the other is the tendency for the individual to overestimate the number of persons that think in the way he does. The following illustration will make it clear how the combination of these two tendencies would inevitably result in minorities making greater errors than majorities in judging group opinion.

Suppose that 90% of a group agrees with a certain proposition. An individual who agreed with this proposition would tend to judge the opinion of the group to be nearer the 50% than it actually was, since this is a general tendency, but since he agreed with the proposition he would tend to overestimate the number agreeing with him. These two tendencies, working in opposite directions, would be inclined to cancel each other out. However, in the case of a person who belonged to the minority group, and who therefore disagreed

TABLE XV

Average Errors of Majority Groups and Minority Groups Classified According to the Opinion of the Group

Group Opinion in Percent	*Error of Means of the Groups Responding "Yes"*						*Means of Means*	*Error of Means of the Groups Responding "No"*						*Means of Means*
							Group I							
0–19	**30.7**	**31.2**	**40.1**	**55.5**			**39.375**	4.1	18.5	19.8	18.3			15.140
20–39	**18.9**	**12.9**	**– 7.9**	**29.4**	**27.6**		**16.180**	– 0.5	– 3.1	– 16.6	6.8	6.5		– 1.380
40–59	7.1	– 3.7	10.0	0.5			3.475	– 15.2	– 19.5	– 20.5	– 22.8			– 19.500
60–79	5.2	– 14.4	0.8	– 7.0	– 7.3	– 1.1	– 3.967	**– 29.4**	**– 41.3**	**– 22.5**	**– 33.7**	**– 39.0**	**– 32.5**	**– 33.067**
80–100	– 9.9	– 10.5	– 16.2	– 16.1	– 16.3	– 22.0	– 15.167	**– 33.2**	**– 37.5**	**– 37.5**	**– 32.5**	**– 26.9**	**– 39.8**	**– 34.567**
							Group II							
0–19	**9.4**	**18.0**	**6.0**	**49.6**	**10.0**		**18.600**	4.1	9.6	8.1	12.7	11.0		9.100
20–39	**– 1.1**	**25.1**	**– 2.0**				**7.333**	13.6	3.0	– 1.0				5.200
40–59	28.0	1.7	– 1.2	18.9			11.830	– 8.6	– 4.3	– 10.3	– 11.0			– 8.550
60–79	7.0	– 1.7	– 14.2	4.2	– 20.6	– 6.0	– 5.217	**– 21.6**	**– 29.3**	**– 25.6**	**– 31.3**	**– 32.0**	**– 11.9**	**– 25.283**
80–100	– 7.7	– 22.3	– 16.4	– 14.5	– 10.8	– 5.4	– 12.850	**– 22.5**	**– 30.3**	**– 43.2**	**31.0**	**– 27.0**	**– 35.0**	**– 31.500**

The average errors made by minority groups have been set in bold face type. Note that the smaller a minority, the greater is the average error.

with the proposition, these two tendencies would operate in the same direction, reinforcing each other, and consequently would tend to increase the error. Such a person's judgments of group opinion would be biased towards the 50% level for two reasons, partly because the individual's own opinion would bias his judgment in that direction and partly because of the tendency for all judgments to be gathered around the 50% mark.

The errors tabulated in the two previous tables have been retabulated in Table XV. In this table, they have been grouped together according to the opinion of the group. The table reads as follows: The first line of figures indicates that in the list of items presented to Group I there were four items in which group opinion was from 0–19%. On these four items, the deviations of the means of the judgments of those agreeing were 30.7, 31.2, 40.1, and 55.5%. The average of these means is 39.375. The groups responding affirmatively to these items are minorities and the errors are large. The four corresponding judgments of group opinion of the majority groups, those responding "No" to each of these four items, are much smaller and average only 15.140. However, in the fifth line of this table, the situation is reversed, and it is the "No" group that is in a minority and which has the largest errors. In glancing down the column of the mean of means, it will be seen clearly how it is that minority groups tend to have a high average error in making judgments of group opinion.

The second part of the table headed "Group II" is a similar regrouping of the data presented in Table XIV. It shows exactly similar tendencies and substantiates the conclusions already given with respect to the judgments of group opinion of members of minority groups.

ACQUAINTANCESHIP AND JUDGING GROUP OPINION

The previous section discussed the judgments of group opinion of minority groups. It is worth while considering, however, those judgments where the individual feels that his own opinion represents a smaller minority than it really does, that is to say, where the individual exaggerates his difference from the group as a whole.

It is possible to divide the judgments with respect to any one issue into three groups. There are those judgments where the individual greatly underestimates the number that hold the same opinion; there are those judgments which are more or less correct; and there are those where the individual overestimates the number that hold the same opinion. This division is arbitrary and for the present purposes it was made in such a way that taking all judgments together, the middle group included 60% of the judgments while of the extremes each accounts for 20%. Each individual can then be given a score for the number of times in which he underestimated the number holding the same opinion as he, and the number of times in which he overestimated the number holding the same opinion. If it were a matter of chance whether an individual overestimated or underestimated the number agreeing with him, then these two scores would be uncorrelated on the average. If, however, some individuals showed a tendency to underestimate while others showed a tendency to overestimate the number agreeing with them, then these two scores would be negatively correlated, and such is the case. The correlation is – 0.4282.[4] If the number of times an individual overestimates the percentage agreement is subtracted from the number of times he underestimates the number agreeing, the difference may be used as a score to indicate the degree to which a person exaggerates or minimizes his likeness to the group. It represents a measure of an aspect of what the sociologists have called social distance.

This measure of the individual's tendency to feel like or unlike the group correlates 0.2732 with the measure of the ability to judge group opinion. This means that the worst judges of group opinion have a slightly greater tendency to feel different from the group than the good judges. This measure is also correlated 0.2765 with the social adjustment score of the Bell Inventory. This latter correlation, however, does not account for the former correlation. The partial correlation between the measure of the individual's tendency to feel like or unlike the group with the measure of the ability to judge group opinion, holding the social adjustment factor constant, is 0.1894. It is of interest to note that there is a negligible correlation of 0.0582 between the measure of the individual's tendency to feel like or unlike the rest of the group and the total adjustment score of the Bell Inventory.

It is worth while discussing at this point the acquaintanceship factor in determining an individual's ability to judge group opinion. It cannot be questioned that, other things being equal, the person who is most closely acquainted with a group will be the best judge of their opinion. The group that has been studied is one in which each and every individual has had comparable opportunity for getting acquainted with the rest of the group. The use which individuals have made of this opportunity will vary considerably, partly according to the degree which they felt that their fellow students belonged to the kind of group to which they felt they belonged, and partly according to the individual's general tendency to get along with people. The former is measured by the individual's tendency to judge the group to be like or unlike himself with respect to opinions, and the general tendency to get along with people is measured by the social adjustment scale of the Bell Inventory.[5] Both of these seem to determine to some extent and independently the individual's ability to judge the opinion of the group, but the general tendency to get along with people in general seems more important than the specific tendency in the present case to feel like or unlike the group. Since the measure of general tendency to get along with people does not refer to the present situation alone, it seems probable that the measure of the ability to judge group opinion would also be valid in many situations other than that in which it was taken. It does not follow, of course, that if the individual who scored best on the measure of the ability to judge group opinion were asked to judge the opinions of another group with whom he was practically unacquainted that that individual would be a better judge of group opinion than most of the people who belonged to the group being judged. But if the best and the worst judges of the present group were all given equal opportunity to get to know another group, and then were asked to judge the opinion of this other group, there would be a high probability that the best judges would tend to remain the best judges and the worst judges to remain the worst judges.

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[4] This correlation is not due to the fact that the universe in question is finite. More than 50% of the judgments were extreme deviates in the case of only one subject.

It is worth recalling at this point that the tendency to participate in the activity of the group, as measured by the ratings of the staff, showed no significant relationship with the measure of the ability to judge group opinion. Consequently the conclusion is indicated that the passive observer of a group is as good a judge of group opinion as the active leader and participant in group life, other things being equal, although their errors of judgment may be due to different causes.

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[5] It should be recalled that the Bell Inventory as well as the other tests discussed were given at the very beginning of the school year. Consequently, the social adjustment scores are not influenced by the social experiences which these people had during their year's work together. These tests were given again by Dr. Lorge to the group at the end of the second semester. The correlations of these second test scores with the measure of the ability to judge group opinion were found to be of the same order as the correlations with the first set of test scores. The measure with which it was most highly correlated was still the social adjustment score of the Bell Inventory, the correlation being 0.315. The correlation with the General Culture test was -0.107.

It is probable that the ability to judge the opinon of the nation may require special abilities, interests, habits, and opportunities, not needed in making judgments about groups with whom one passes one's daily life. For example, if one is judging the opinion of a group with whom one has daily contact, it is probably relatively unimportant whether or not one reads a wide variety of newspapers and magazines. However, in judging the opinion of the nation as a whole, it is probably essential to know quite a lot about the kind of material that is being printed in the daily and weekly press. There is also the possibility that the kind of people who take a strong interest in their immediate circle of associates may not be particularly interested in people in general, and those that are interested in society as a whole may have but a restricted interest in the people in their immediate circle.

Unfortunately, the present investigation does not contribute a great deal to the clarification of this issue. The first group investigated were asked to judge both the opinion of their own group and the opinion of the adult population of the United States on a number of issues. Consequently, each individual could be given a total error score for his judgments of the group and for his judgments of the general population. Both these scores have high standard errors, the former on account of the fact that the basis for judgment was poor even for the best judges, and the latter on account of the fact that the number of items is small. The correlation between these two scores was found to be 0.1938, which is larger than the split half reliability of either measure. This correlation comes just within the 5% level of significance. It is possible then to say that there is at least some communality between the errors made in judging groups with whom the individual is in close contact and the errors made in judging groups which are socially more remote.

CHAPTER IV

SUMMARY OF THE STUDY, CONCLUSIONS, AND THEIR IMPLICATIONS

The Problem and the Method of Study

The problem defined in the opening chapter was that of investigating the relationship between opinions, abilities, and measures of other personality characteristics, and the ability to judge group opinion. Group opinion was defined as the percentage of a specified group agreeing with a specified proposition. Various specific questions were raised and the last two chapters have described the experiments which were designed to supply answers to these questions.

The method of investigation was that of confronting a group with a set of statements, and asking each member of the group to estimate the percentage of the group that would agree with each of these statements. Each individual also expressed his own agreement or disagreement with respect to each of these statements and consequently it was possible to know the actual opinion of the group. Each individual member of the group was also asked to provide additional information about himself or herself such as how strongly he or she felt about the issue referred to in each statement, and to indicate his or her sex. In the case of the second group studied, there were also available the scores of each member of the group on a variety of tests. These included the Otis test of intelligence, the Bell Adjustment Inventory, and the Minnesota Scale of Opinions. Furthermore, it was possible to collect some information with respect to this group from those who had associated with them during the academic year in the capacity of instructors.

Both groups had worked together as students, the first group during a period of one semester, and the second group during the two semesters. The first group included over 200 members, while the second group included only 56. Consequently, it seems probable that the members of the second group knew a great deal more about each other than those of the first group, and their superiority in this respect was probably increased by the fact that their work brought them together more frequently and offered more opportunity for personal contact.

The main part of the present study was carried out with the second group. Consequently, it was possible to make use of the experience derived from the first group in designing the questionnaire for the second group. In particular, it was found that subjects found it simpler to judge the percentage of a group that agreed with them about an issue than the percentage that would answer "Yes" to any given statement.

It is probable that the second group was more willing than the first group to cooperate in this investigation. Returns alone would indicate this. The better cooperation can be ascribed partly to the improved form of the questionnaire which simplified the task for the subjects, but mainly to the fact that the professor who introduced the questionnaire to the students of the second group was in a position which in itself would exert moral pressure, since he and the group stood in a particularly friendly relationship. On account of this relationship, it seemed that none were afraid to put their names to the questionnaire.

It is probable that the members of both of the groups had a better opportunity to know the opinions of their fellow members, with respect to the issues stated in the questionnaire, than most administrators have of knowing the opinions of the populations they serve. Consequently, it may be assumed that the magnitude of the errors made by these groups in judging their fellows would not be overestimates of the errors which these people would make in administrative positions.

Main Conclusions and Their Interpretation

1) The errors of individual judgments of group opinion are on the average large. Judgments of group opinion on most issues with the groups studied were scattered over almost the entire scale from 0% to 100%. This occurred not only when the individuals were asked to judge the opinion of the group with whom they had been working but also when they were judging the national group. The judgments of group opinion were *slightly* less scattered in the case of the second group on account of the fact that the members of the group were better acquainted with each other.

The present investigator had not expected to find such large errors of group opinion in cases where there had been so much opportunity for the judges to learn about the group being judged. Certainly, the present writer placed far more confidence in his ability to judge the opinions of such groups than the results of his own judgments indicated. Several of the judges expressed surprise when they were informed of the errors they had made. Just as in the past when considerable reliance was placed on judgments of personality until research demonstrated the unreliability of such judgments, so too would it seem that the confidence which many feel in their ability to judge group opinion is largely unjustified. The findings suggest that judging group opinion as a method of evaluating the success of the educative process is a worthless method in the hands of most people.

Of course, it must be remembered that the task of judging group opinion has been made especially hard in these experiments. It is necessarily much harder to make specific judgments of group opinion than it is to make general judgments. It is usually fairly easy to decide whether group X is in general more liberal or less liberal than group Y for this is a much easier task than deciding the opinion of group X with respect to some specific issue. General judgments have a far greater likelihood of being sound than have specific judgments. The present study has dealt with highly specific judgments and consequently the conditions under which judgments have been made are such as to maximize errors. Similarly, in judging personality, it is much easier to decide whether an individual is generally competent in his job than to rate him with respect to each of the specific qualities needed for success in that particular kind of work.

2) The mean of a number of judgments of group opinion is on the average a better estimate of group opinion than that of a single judge. This conclusion applies not only to those instances where the subjects were judging the group with whom they were working but also in those instances where they were judging the national group.

Investigations in judging personality, such as that conducted by Hollingworth, have shown that, whereas individual judgments of personality tend to have large errors, the errors made by a number of judges tend to average zero. Consequently, the average judgment of a number of judges of a well defined personality trait tends to be a fairly good estimate of the quantitative value of that trait. A similar tendency occurs in judging group opinion; the average of a number of judgments tends to be a fairly good estimate of the opinion of the group being judged. This is true in spite of the fact that individual judgments tend to be biased through causes which will be discussed under the third section of the conclusions. This finding suggests that there are a large number of more or less independent factors which tend to bias judgments in one way or another but which do not affect all individuals equally and which consequently tend to cancel out when the performances of a number of individuals are added together and averaged. However, there is a tendency for the averages of a number of judgments to show a bias in the direction of the 50% mark.

3) The individual tends to overestimate the percentage of the group being judged who thinks as he does. This phenomenon appeared to a marked degree with both groups studied. It had been suspected that such a phenomenon would appear on the basis of an analysis of the researches in the fields of personality judgment and literary criticism. It had not been anticipated, however, that a systematic bias of this kind would be such a powerful influence on judgments of group opinion. Although the present investigator was led to expect that the individual's own opinions would bias his judgments of group opinion, there is always the possibility that some other explanation may account for the correlation found between the individual's own opinion and his judgment of group opinion. An alternative explanation of this correlation is that people tend to associate with people of like opinion; consequently, their experience of society tends to be that of a group of individuals with similar ideas, attitudes, and opinions. Even in such matters as height and body weight, it has been demonstrated that men and their wives show a considerable correlation, and this association seems to occur also in psychological spheres. However, the present investigator is inclined to believe that the tendency to associate with those of similar attitudes and opinions is not as adequate an explanation of the correlation of the individual's opinion and his judgment of a group as that which accounts for it in terms of projection. The phenomenon occurs with too great a variety of things being judged to make the former explanation feasible.

4) The degree to which an individual feels strongly about an issue has little effect on the amount by which his judgment of group opinion is biased by his own opinion.

The members of the first group studied were asked to provide not only an estimate of group opinion and of their opinion about each issue, but they were also asked to indicate those issues about which they felt strongly. No doubt some people had a different interpretation from others of the meaning of the term "strongly" and this may have influenced the results to some small extent in the direction of the conclusion as it is stated above. It had been anticipated that a very considerable relationship might have been expected between the degree to which a person felt strongly about an issue and the relationship between his own opinion and his judgment of group opinion, while a large correlation might be expected in those cases where feeling runs high, but the data do not provide evidence for this theory. It may be, of course, that in the group studied individual differences in "strength of feeling" were small, and it may have been that the group felt little real strong feeling about any of the issues. In such a case, the present conclusion would not apply to other groups where feeling with respect to the issues showed a greater variation.

5) Errors made in judging group opinion on one issue tend to be correlated with errors made in judging group opinion on other issues. Consequently, it is possible to obtain a measure of the general ability to judge group opinion. Some individuals seem to be extraordinarily good at judging group opinion while others do little better at this task than would be expected if their judgments depended on chance. In the case of the second group studied, it was possible to give to each subject a measure of his or her ability to judge group opinion. The reliability for this measure was found to be 0.64 on the basis of the Spearman-Brown formula. This measure was the sum of the errors of judgment, in terms of percents, made on the eighteen items which correlated highest with the common factor among the errors. The correlation of the remaining six items with the common factor were negligible. The measure included errors made on items where the issue might be described as conservatism-liberalism and also on items where the issues could not be described in such terms.

It had been anticipated that there would be a greater communality among the errors of judgment on those items concerned with conservative-liberal issues than between such errors and the errors made in judging group opinion on other kinds of issues. It had been anticipated that judgments of group opinion on specific issues would be made in terms of general judgments such as the general level of liberalism of the group. This does not seem to be the case, and little evidence can be found for the haloing effect of any such general judgments.

6) Men and women seem equally capable of judging group opinion. On judgments of individual items, the average judgments of the men did not differ significantly from the average judgments of the women in the case of the first group. This indicated that men and women did not differ significantly in their general ability to judge group opinion. This conclusion was sub-

stantiated by the data derived from the second group where it was found that the average score for the men was almost identical with that for the women on the general measure of the ability to judge group opinion. The hypothesis that the judgments of group opinion of men might be better estimates of the opinion of the men than of the group as a whole, in the case of a mixed group, could not be tested owing to the fact that the opinions of the men and women as groups did not differ significantly in the case of the populations studied. However, in the study with the first group little evidence could be found to support the theory that the members of this group tended to judge the total population in terms of their own group. Unfortunately, the second group was too small to determine whether the ability to judge group is associated with different kinds of personality qualities in men than in women.

7) The measure of the ability to judge group opinion was found to have little relationship with measures of general ability such as the Otis General Intelligence Test, the Cooperative General Culture Test, and the Thorndike Reading Test.

If the group had varied in ability over a much wider range, this conclusion might not have been drawn. It is obvious that intelligence plays some part in determining the accuracy of judgments of group opinion but the variation in intelligence found in this group seems to be unimportant.

8) The measure of the ability to judge group opinion was found to be related to measures of personality adjustment such as those supplied by the Bell Adjustment Inventory and the Minnesota Scale of Opinions. The measure of adjustment with which it had the highest correlation was the social adjustment scale of the Bell Adjustment Inventory.

That social adjustment plays an important part in determining an individual's ability to judge group opinion is not surprising. It has been known for a long time that individuals who have extreme difficulty in adjusting themselves to their social environment often have a completely distorted picture of the attitudes of those around them. In the cases of many psychotics, their pictures of their social surrounding bear little relationship to actual fact. The present research tends to confirm the view that all individuals do not have equally accurate pictures of their social surroundings. Of course, it is realized that it is difficult to determine whether an individual is socially maladjusted because he is, for other reasons, a poor judge of his social group, or whether an individual is a poor judge of his fellows because he is socially maladjusted. For example, if an individual's judgment of group opinion is greatly affected by his own opinions, then it may be difficult for him to know the kind of social adjustments which his fellows may expect of him.

9) The measure of the ability to judge group opinion is correlated to a small extent with the degree to which the individual overestimates or underestimates the number that think as he does. Those who tend to believe that their opinions represent a smaller proportion of the group than is actually the case tend to be slightly worse judges of group opinion than those who believe the contrary. There is good evidence that some people show a consistent tendency to underestimate the number that have the same opinions as they do.

It had been anticipated that those who tended to feel that their opinion differed from those of the group as a whole more than was actually the case might be very much worse judges than those who showed no such consistent tendency or who felt that the reverse was the case. This was found to be true to a very slight extent but not to the degree anticipated. More important from the point of view of selecting administrators is the fact that some people show a consistent bias in their judgments of group opinion either in the direction of or away from their own opinions.

10) Members holding the minority opinion within a group make a larger error on the average in judging group opinion than do those holding the majority opinion.

This was shown to be the consequence of two factors, namely the tendency for judgments of group opinion to be biased towards the 50% mark and the tendency for opinions and judgments of group opinion to be correlated. With the members of minority groups these two tendencies tend to reinforce each other while with the members of minority groups they tend to cancel each other out. The tendency for judgments of group opinion to be biased towards the 50% mark results in the overestimation of the size of minorities. This is inconsistent with the traditional theory of the psychology of the crowd which indicated that minorities tended to be ignored.

11) Those who are most liberal according to the Minnesota Scale tend to be poorer judges of group opinion on those issues that divide conservatives and liberals than are those who are most conservative. In judging group opinion with respect to other issues, no such relationship was found.

This is a finding which is not readily interpreted. It is possible that since the liberal, like all reformers, tends to be one whose emotional state is often characterized by conflict, he is consequently ill fitted for making judgments in situations where objectivity is difficult and where his own emotional conflicts may be aroused. However, this interpretation like other possible interpretations cannot be substantiated by facts until further research has been carried out.

Implications of the Study

The conclusions which have been outlined in this chapter do at least throw some light on the broad general problems outlined in the first few pages of the present study. They suggest modifications of many common practices, particularly in the matter of selecting administrators, and add to a clarification of concepts such as social intelligence. In this last section of this last chapter, it is proposed to state explicitly what seem to be the implications of the conclusions and the problems they suggest for further research. Of course, some problems for further research have been raised in the interpretation of the conclusions, but there are many others which have not been mentioned hitherto.

The present study has been virtually a study of a special aspect of what has been called social intelligence. This cognitive aspect of social adjustment, the ability to judge group opinion was found to be related to other characteristics of personality. It would be interesting to know whether other aspects of social intelligence, such as the ability to achieve certain objectives in social situations, would be correlated with the ability to judge group opinion. Unfortunately, the term social intelligence has been widely used without any accompanying analysis of the kind of behavior in which the ability manifests itself and consequently its relationships with the other attributes of personality have never been adequately studied. It is an important problem to determine the relationship of such abilities and attributes, partly because it would throw some light on many abnormalities of social behavior.

It has been maintained by numerous people in education, business, and government that effective administration and effective management require something more than sheer intellect and knowledge of the job. For many years now, it has been customary to speak of administrative ability and managerial ability as if they were distinct aptitudes possessed by but a few individuals. In practice, however, and especially in business, the criterion for promoting workers to managerial jobs has not been managerial ability but success at some other kind of work. For example, sales managers and sales supervisors have been selected from among the star salesmen, largely because the men were star salesmen. Although such a system for selecting individuals for managerial posts has proved most unsatisfactory, no better system has yet been evolved to replace it.

In many types of work, it would be difficult to replace the system of promoting workers from one kind of work to another on the basis of success in their original capacity since such promotions act as incentives for industriousness. In such situations, it would be necessary to replace the incentive system by one which did not depend upon the present ladder of pay and rank, otherwise the situation will be one in which the workers are likely to feel that injustices are being done and in which promotion is the result of a system of unfair favoritism.

It has often been said that the rise to power of many rulers has been due partly to their unusually shrewd understanding of public opinion and of what the public in any particular set of circumstances wants and is willing to stand for. It is of interest to note in this connection that many observers of Germany in the late twenties and early thirties predicted that Mein Kampf could not possibly appeal to the German public. Yet as history has tragically demonstrated, the author of the volume was a shrewder judge of the public's taste. Unfortunately, however, the possession of this ability to judge public opinion does not seem to be any more of a guarantee of general intellectual ability than is the possession of blonde hair or a taste for walking after the manner of geese.

Fortunately, however, the possession of the ability to judge group opinion does not exclude the possibility that the possessor may be intelligent, able, and good, and possess all the other desirable qualities necessary for democratic leadership. The problem for the public is to discriminate those potential leaders who have these qualities from those that have not. Of course, such qualities are not easily judged and the platform does not provide a situation wherein such qualities can be most easily observed.

E. L. Thorndike (12) suggested on the basis of his study of rulers that the best single criterion for selecting good rulers would be intelligence. However, in his study of rulers, the events by which rulers were rated for intelligence included many events which displayed their ability to judge group opinion. Consequently, these ratings were probably severely influenced by factors little related to intelligence. It follows then that although intelligence may be of fundamental importance for wise leadership, there is nevertheless no single criterion of real value in selecting leaders.

The present study suggests that people should show more caution before asserting that the opinion of any group is either this or that, even in cases where there has been close contact between the individual and the group. Teachers who believe that they can evaluate their work by judging the changes in the opinions of their students should learn that such judgments are highly unreliable and are probably strongly influenced by wishful thinking. The "progressive" group in education who would rely entirely upon such judgments of attitudes and opinions to evaluate the outcome of progressive methods should take note that such a technique loads the dice nicely in favor of progressive methods. The evaluation of changes of opinion through the judgment of teachers is probably almost worthless.

Similarly, the politician who declares that 99% of the public is behind him when other facts contradict this should not be looked upon as necessarily a deliberate liar but as one who probably does not have enough information to make an accurate judgment and who consequently is making a judgment of group opinion on the basis of irrelevant factors which include his own opinions and desires. Greater caution should be exercised in making judgments regarding the opinions of groups and in accepting the judgments of others regarding group opinion. People have not realized how difficult it is to make accurate judgments of this kind, just as thirty years ago people did not realize how difficult is the task of judging personality.

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